PAUL BROWN

SEVENTY YEARS OF THE POSTWAR ROYAL NAVY

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Title page
Sovereign was the second Swiftsure-class nuclear-powered submarine. She was built by Vickers-Armstrongs at Barrow and completed in July 1974. Her armament included Spearfish torpedoes, Tomahawk cruise missiles and Harpoon anti-ship missiles. Her main Cold War roles were to track Soviet submarines which carried intercontinental ballistic missiles, and to provide intelligence on Soviet navy systems, communications and deployments. On 20 October 1976 she surfaced through the ice near the North Pole as part of Operation *Brisk*, testing navigational systems and equipment performance in low temperatures. On a typical patrol she spent two months submerged inside the Arctic Circle. She is seen here in May 1991. *Sovereign* underwent an extensive refit at Rosyth in the mid-1990s and was rededicated in January 1997. Cracks were discovered in the tail-shaft during post-refit sea trials and she returned to Rosyth for 14 weeks of emergency repairs in June 1998. She was finally decommissioned on 12 September 2006 at Devonport. (Crown Copyright/OGL)

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Front cover: The aircraft carrier *Queen Elizabeth* in October 2019 off the east coast of the USA, whilst conducting Lightning flying trials, escorted by the destroyer *Dragon*. (Crown Copyright/OGL)

Acknowledgements:
As well as chronicling the main events in the history of the Navy over a period of 70 years, this book presents many excellent images of Royal Navy warships and auxiliaries. Many of these were taken by RN photographers, and their outstanding quality is testament to the skills and dedication of these personnel: I would like to thank them for their work. Thanks also go to the editors of MoD's Defence Imagery, and the staff of the MoD's Defence Intellectual Property Rights section, for their help in locating images and clarifying copyright status; the National Museum of the Royal Navy for permission to reproduce Wright & Logan images; Imperial War Museums for permissions to reproduce images from their collection; Michael Lennon, and J & G Ship and Maritime Photographic Collection for permission to reproduce a number of their images; and all the other photographers who have contributed.

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INTRODUCTION

What was the Royal Navy like in 1952 and how has it changed since then? At that time the UK was still a global and maritime superpower with a large empire, though the latter was waning. It had the second largest navy, the largest shipbuilding industry, and the largest merchant fleet in the world. The vast networks of seaborne trade routes, linking dominions, colonies, and traditional trading partners (such as in South America) were policed by the Navy. The Navy was large and versatile enough to be able to strongly engage independently in most foreseeable types of conflict.

What was it like to serve in the Navy then and how has it changed in the past 70 years? If you joined the Navy in 1952 it could have been through regular entry or national service conscription. Entry as a rating was predominantly as a 'boy' at the age of 15, whilst officer cadets entered at 16. Once ratings reached the age of 18 they would have to sign on for 12 more years of service, which could be extended by another ten years. Only men could serve at sea and for ratings bed was quite likely to be a hammock; rum was issued once a day and catering was, except on the largest ships, carried out by the ratings themselves in their individual messes rather than central cafeteria. The ship's company would be wholly white, or perhaps have a very small number of non-white men. There would be a class divide between the officers and ratings and it was not common for ratings to progress to officer posts. Relations between officers and men were largely formal, based on the command-and-control structure.

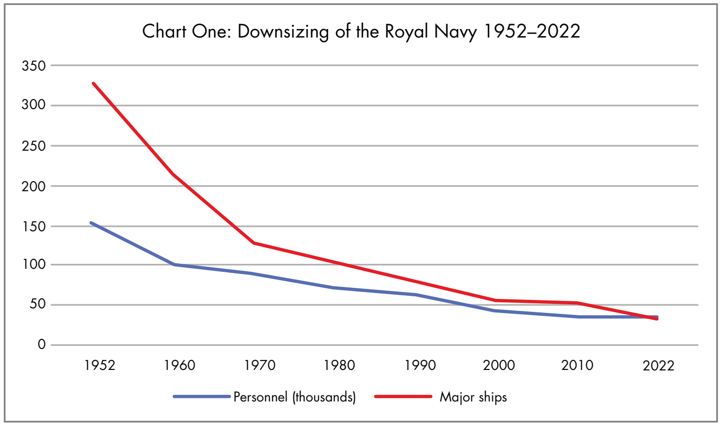
Because the fleet was distributed around a worldwide network of bases, after initial training you could soon find yourself on an overseas deployment which would last two years or more, even for men whose families were not accommodated at the base port. Despite the many tropical zones of service your ship would lack air conditioning. The two big fleets – Home and Mediterranean – would deploy on several cruises a year, visiting the more exotic and attractive ports. It was different in the Far East because there was a war on – the Korean War, so a substantial fleet, including aircraft carriers and cruisers, was engaged in patrols and combat off the Korean coast. However, some men would spend periods without life on the ocean waves, instead finding themselves part of the skeleton crews in the many ships of the reserve fleet, harbour-bound in a creek or dockyard berth – mostly in the home ports and Malta. The Cold War was intensifying, with the USSR building up a large submarine fleet, and it seemed that the Atlantic might again become a theatre of conflict. Thus, the role of NATO, in which the UK was second only to the USA, was becoming more important, with regular exercises conducted by multilateral forces.

Royal Navy personnel totalled 153,000, including Royal Marines and the women of the Women's Royal Naval Service and the nursing service. Most striking was the size of the Navy: there were 328 ships of frigate or submarine size or larger, 147 of which were in reserve, and over 400 smaller ships. Most of these ships had been built during World War II but there was

Crew members in HMS Tally Ho! pictured on 25 June 1954, after the submarine became the first of the T class to cross the Atlantic whilst submerged. The 2,800-mile passage from Bermuda to Gosport took three weeks and was conducted at periscope depth using the snort air intake. (Conway Picture Library)

still a small contingent of pre-war ships, including cruisers and auxiliaries. The surface warships were mostly steam powered – steam turbines in the larger ships (from destroyer size up) and steam reciprocating engines in many frigates and most smaller ships. The armament of these ships comprised guns, torpedoes and anti-submarine mortars. Sensor outfits, including radar, sonar and high-frequency direction finders, were fairly rudimentary. The era of the battleship had been eclipsed, with just one remaining in service. Submarines were diesel and electric powered and armed with torpedoes and, in some cases, a gun.

Fast forward 70 years: there has been a dramatic reduction in the size of the Royal Navy, which no longer ranks amongst the world's top three navies. The UK's superpower role is much diminished, and its empire has gone. Spending on defence has reduced from 11 per cent of GDP (in 1952) to 2.5 per cent. The nation's shipbuilding industry and merchant fleet are small shadows of their former selves, as is its Navy.



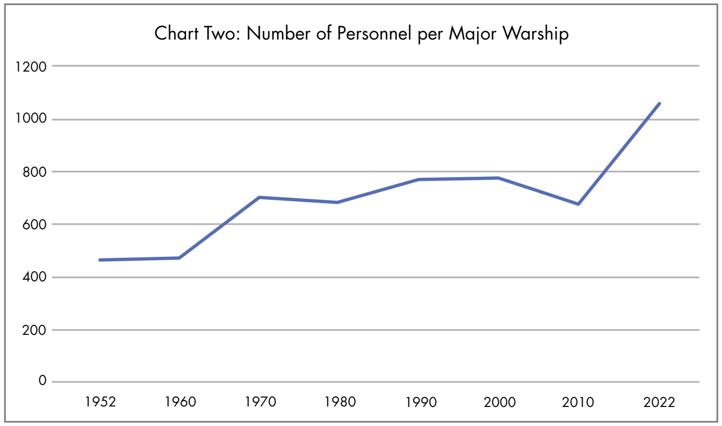


Chart 1 shows the number of major warships (of frigate/submarine size or larger), and the number of regular personnel (in thousands), over 70 years. Both have been in steady (and often steep) decline, but it is notable that the ratio of the number of personnel to the number of major ships has doubled (see Chart 2). In 1952–60 there were 470 personnel for every major warship, but this had increased to 1,060 by 2022. This effect is only partly explained by the loss of the reserve fleet (which only had small complements of personnel) in the fifties, and the more recent practice of drafting two crews to a small number of ships (such as strategic submarines and the forward-deployed Middle East frigate) or providing an extra half-crew to allow rotation of personnel on leave (as was the practice in *Scott* for example; see page 262). It indicates that there are far too many personnel in shore postings for the size of the fleet. According to Navy Secretariat data, on 1 November 2022 only 40 per cent of RN personnel (including Royal Marines) were serving in sea-going ships.[1]

On 1 October 2021 the Navy had 35 admirals and 69 commodores. There was thus an admiral and at least two commodores for every major ship (i.e. frigate size and above), even if the fact that at least nine of the 33 major ships and submarines were out of service was ignored. An extraordinary fact is that of the 230 captains in the Royal Navy in January 2022 only four had sea-going commands. Of the 900 commanders only 30 had sea-going commands.[2]

In January 2022 personnel totalled 34,130 including Royal Marines. Women now serve at sea and represent about 11 per cent of personnel. The Navy got its first female admiral in 2021, and several women have commanded escorts and smaller ships. About 5 per cent of personnel are of non-white heritage, well below their representation in the UK working population, 14 per cent, and there is no evidence that any progress is being made by the Navy in increasing their representation.

Ratings enter aged 16 or older (up to age 39) and can engage for as little as four years' service, which can then be extended to

The surrender of the Argentine forces in South Georgia is signed by Captain Alfredo Astiz, a marine commando, aboard the frigate *Plymouth*, 26 April 1982. Opposite him are Captain Nick Barker of HMS *Endurance* (left) and Captain David Pentreath of HMS *Plymouth*. The retaking of the island by a task group led by HMS *Antrim* was the first British success in the Falklands conflict. (© IWM FKD 1176)

Royal Marines of Bravo company, 40 Commando, in a Jackal armoured vehicle crossing a dusty Afghan desert at sunset as their tour in the country came to an end, in September 2010. The Marines were conducting a final push, moving through the desert, aimed at providing security and stability for the Afghan people within remote villages. After another tour of duty 40 Commando left Helmand province in April 2013, ending seven years of Royal Marines deployment in the NATO security force in Afghanistan. (Crown Copyright/OGL)

as many as 22 years. Officer cadets enter at 18 or older, on an initial 12-year commission and on a full commission would retire aged 55.

The rum issue has long since gone, except on special occasions, and all personnel sleep in bunks, in air-conditioned ships. All ships now have centralised catering and dining rooms. Alongside the formal command-and-control systems there appears to be more informality between officers and the lower deck, and promotion from the lower deck to officer rank is no longer a rarity. Overseas deployments are usually for six months or less, and never longer than nine months. Ships' companies are generally smaller in numbers and, to enable vessels to stay at sea for more days each year, some ships and submarines have two crews which rotate, or have larger ship's companies which allow one-third of the crew to be on leave or ashore at any one time. On the larger surface warships trickle drafting means that the whole ship's company does not change at one time, giving greater continuity and helping to maintain operational capability. According to the Navy, efforts are being made to reduce the number of senior officers and to transfer more personnel to sea-going roles.

By 2022 the Navy had only 32 major ships and 43 smaller ships and there was no reserve fleet. It no longer had a worldwide network of bases and had a much-reduced capacity to protect trade routes – the continuing commitment in the Persian Gulf being a rare

Members of the ship's company aboard HMS *Illustrious* at the Trafalgar 200 International Fleet Review, Spithead, June 2005. (Keith Belfield)

example of this. Former imperial trade has largely been supplanted by trade with the EU and China. Having long since retreated from its power base in the Indo-Pacific regions, the Navy is now trying to re-establish a modest presence there, with two patrol ships permanently on station and periodic task group deployments to the area. This reflects concerns about the growing military might of China. The Navy's NATO role in the eastern Atlantic remains a dominant commitment. A Royal Navy presence in a few small British Overseas Territories is still required – in Gibraltar, the Falklands and the Caribbean. The Navy today could not mount an independent operation of the size seen in the 1982 Falklands conflict, not least because it lacks the numbers of surface escorts and submarines required. Thus, in any major conflict the Navy would rely on its NATO allies to complement its resources.

What it lacks in numbers of ships the Navy partly compensates through the potency of its forces, which include two large aircraft carriers and nuclear-powered submarines, which can launch nuclear-armed ballistic missiles or cruise missiles and torpedoes, and it has managed to cling on to an amphibious warfare force. There is, however, a need for more escorts and attack submarines to make a more balanced fleet. Guided missiles are now the main armament of the larger surface ships and are complemented by guns, homing torpedoes and helicopter-borne weapons. Sensors and systems, such as radar, sonar and electronic warfare systems, are highly sophisticated and complement the computerised automated weapon systems.

Most of the larger surface ships have gas turbine propulsion, and all the submarines are nuclear-powered. The ships are of varying ages – some Type 23 frigates and the remaining Trafalgar-class submarine and Hunt-class minehunters are over 30 years old. Replacement of ships and submarines with new vessels comes at a glacial pace, often being delivered years behind schedule, as with the Astute-class submarines: construction of the fourth boat, *Audacious*, took 12 years, and she did not enter service until five years after the third boat had been completed. If the seventh and last boat is completed on time in 2026, the commissioning of the class will have spread over 16 years. The Type 26 frigates are only being laid down at the rate of one every two years, and the first, *Glasgow*, will have taken ten years to build if it is completed on schedule in 2027. The last of the eight ships will not be completed until 2037. The last of five Type 31 frigates, ordered in 2019, will not be completed until 2028 at the earliest, if it is on time. The current minehunters, which could double as patrol vessels, are not being replaced with ships capable of such roles, but instead autonomous systems are being deployed in small launches and survey ships are being phased out. Thus, the number of sea-going ships is being further reduced.

The availability of the current warships is poor. Manning shortfalls have led to some Type 23 frigates and Type 45 destroyers, as well as one of the two assault ships, spending long periods in lay-up. In 2021 only eight of the 13 Type 23

frigates recorded any days at sea.[3] The other five were either laid up unmanned (because of personnel shortfalls) or in refit. The Type 45 destroyers have repeatedly suffered engine failures and have spent long periods out of service for rectification work (which has suffered 'bloody disgraceful' delays, in the words of former first sea lord, Lord West[4]) and long refits, or because sufficient manning was not available. In 2021 two of the six Type 45s spent no days at sea, whilst a third recorded only 67 days at sea. By April 2022 three of the six were out of commission, undergoing or awaiting rectification work. The recent long refit of the Trident submarine *Vanguard* was scheduled to take three years but overran by more than three years. The aircraft carrier *Prince of Wales* was out of service for six months following engine room flooding, and similar problems were experienced in *Queen Elizabeth*: the biggest flaw with the carriers' construction appeared to be the poor quality of internal pipework.[5] In 2021 *Prince of Wales* spent only 101 days at sea, compared with 199 for her sister ship.[6] In 2022 she suffered a propeller shaft failure which put her out of action again and caused the cancellation of a deployment to the western Atlantic.

There are also capability issues: with the phasing out of Harpoon all the destroyers and frigates lack shipborne anti-ship missiles and overall, RN combatants are considered to be under-armed and outmatched by many potential adversaries (as well as the ships of allied navies).[7] The new offshore patrol vessels are woefully under-armed and the new Type 31 frigate will be weakly armed, its largest gun being a 57mm, and, like the Type 26 it will lack both a shipborne torpedo system and shipborne anti-ship missiles. It is intended to fit the Type 45s and Type 26s with a new anti-ship missile system, but this will probably not be until 2030 at the earliest.

Whilst the UK has not been directly involved in a major war in the last 70 years, there have been several 'warm wars' including Korea, Suez, Indonesia, the Falklands and two Gulf wars. A persistent threat, which shaped the Navy until 1990, came from the Cold War. The threat from Russia has returned, its military collapse having been reversed since 2008, with massive increases in defence spending, and its Ukraine invasion may mark the start of a new cold war. The war in Ukraine has revitalised NATO and European security consciousness and had a unifying effect on the West.[8] China is already recognised as a potential and formidable threat to global security. It has been speculated that more polarised military blocs might develop: the eastern bloc, centred on Russia and China, plus countries such as Iran, Iraq and Pakistan; and the western bloc, centred on America and its NATO allies, plus countries such as Australia, Israel and Japan.[9] Such a possibility might be offset by a reluctance on the part of China, as the second largest economy in the world and a global trade superpower, to risk incurring damaging sanctions from the West if it aligns too closely with Russia, especially militarily.[10]

The Navy has been through a rough patch: we can only hope it gets better. The Conservative government talks of a bigger Royal Navy, and an increase in the defence budget to 3 per cent of GDP by 2030, but this has yet to translate into anything tangible. After more than 70 years of steep decline any increase in size seems, at best, likely to be very modest – five more frigates, of the new Type 32, is the stated aim by the mid-2030s. We can only ponder what the next 70 years will bring, not just whether the Navy will be bigger or smaller, but what the effects of technological change will be, with modular ships, unmanned aerial, surface and submarine vehicles, laser weapons, electromagnetic rail guns and hypersonic missiles already in the development stages.

In presenting this 70-year history of the Royal Navy I have borne in mind the poet John Betjeman's claim: 'People's backyards are much more interesting than their front gardens'. Using that as a metaphor I have included not just the positive things in the Navy's 'front garden' – that their PR people would understandably like to emphasise – such as grand exercises, battles won, records broken, humanitarian aid delivered, better ships and sailors' living conditions improved, but also the things they would be less likely to dwell on, in the 'backyard' – such as collisions, groundings, mutinies, sinkings and too many admirals. Together I hope they give a balanced picture of the service in the second Elizabethan era.

CHAPTER 1

THE BIG NAVY 1952–1959

The fifties was the decade in which the Navy, though still large, had to come to terms with the fact that its place in the world order had changed irrevocably. Already supplanted by the United States Navy as the largest navy in the world, it was to be reduced to third place by the growth of the Soviet Navy. The UK was hobbled by the debts incurred in World War II, and postwar austerity severely limited investment in the Navy. As the decade wore on the nation's humiliation in the Suez crisis reinforced the view that the UK was now a second-order power, and led to the swingeing cuts to the Navy of the 1957 Defence Review. By the end of the decade, although the Navy was still a strong one with worldwide bases and operations, the disintegration of the empire, which had started with the loss of India in 1947, gathered pace, and cracks in the nation's economic base were becoming more apparent.

In 1947, in the aftermath of World War II, UK defence spending was 16 per cent of GDP, as the armed forces were still adjusting their structures and strength to reflect peacetime conditions, but it had declined to 6 per cent by 1950. But then came the Korean War, and defence spending increased, to 11.2 per cent of GDP in 1952. Thereafter it declined throughout the rest of the fifties to 7 per cent of GDP by 1959.[1]

In 1952 the Royal Navy still operated a large number of ships, with squadrons distributed amongst five overseas fleets and stations, as well as in home waters. The ships were organised into the Home and Mediterranean fleets; Home submarine flotillas; the Home Commands (Portsmouth, Plymouth, Portland, The Nore, and Rosyth/Scotland & Northern Ireland); Rhine Squadron; Fishery Protection Squadron; RNVR[2] tenders; the Reserve Fleet; and four foreign stations (East Indies, Far East, South Atlantic & South America, and North America & West Indies). Appendix 1 shows the disposition of the active fleet in May 1952.[3] There were 25 Royal Naval Air Stations, including one at Singapore and two in Malta – all the others being in the UK.

As well as the home dockyards of Chatham, Devonport, Portsmouth, Rosyth and Sheerness there were dockyards in Malta, Trincomalee, Singapore and Simonstown, and bases in Portland (UK), Bahrain, Aden and Hong Kong (see map on page 14). Also, there was a training squadron based in Londonderry and three minesweeper squadrons based in Harwich.

The fleet included 328 ships of frigate or submarine size or above, of which 147 were in reserve, and consisted almost entirely of ships built during or shortly before World War II. There was a huge variety of types and classes. The total numbers of ships of each type, and the numbers of those that were operational, in reserve or undergoing modernisation are shown below:

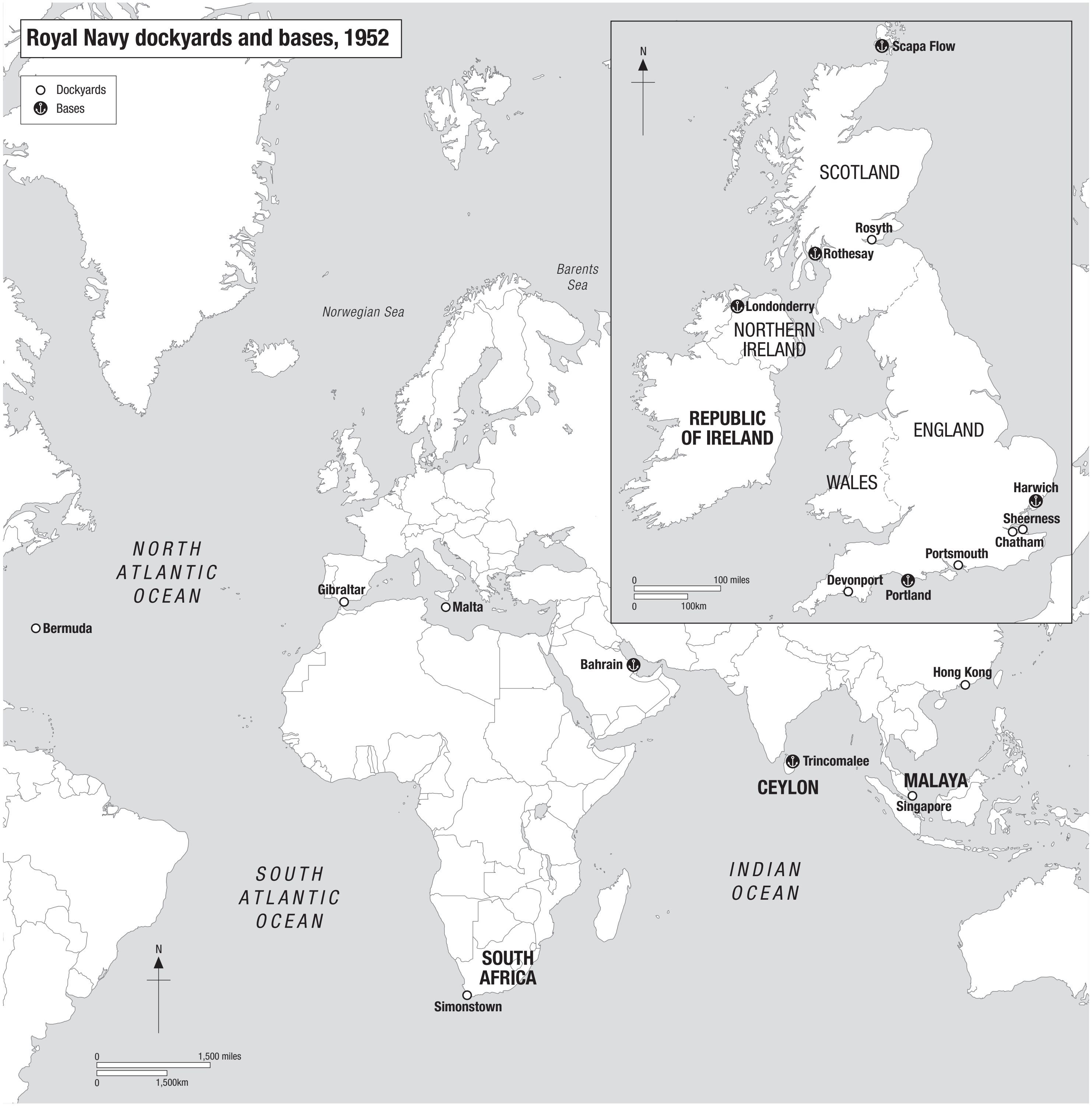
TYPE	OPERATIONAL OR IN REFIT	IN RESERVE	UNDERGOING MAJOR MODERNISATION	TOTAL
Battleship	1	4	-	5
Aircraft Carrier	12	1	1	14
Cruiser	13	10	2	25
Monitor	-	2	-	2
Fast Minelayer	2	1	-	3
Destroyer	38	47	-	85
Frigate	53	68	19	140
Submarine	37	14	3	54
Midget Submarine	*			4
Ocean Minesweeper	26	39	-	65
Motor Minesweeper				67
Minelayer	6	7	-	13
Fast Patrol Boat and Motor Launch				89
Trawler	19	9	-	28
Landing Ship Tank				33
Landing Craft Tank				36

* Data unavailable for shaded entries, only the total shown in last column.

In addition there were the following numbers of support ships and auxiliaries (excluding various smaller harbour craft), some of which were manned by the Royal Fleet Auxiliary (RFA):

TYPE	OPERATIONAL OR IN REFIT	IN RESERVE	UNDERGOING MAJOR MODERNISATION	TOTAL
Salvage Ship/ Diving Vessel				14
Boom Defence Vessel				76
Mooring Vessel				17
Depot/Maintenance Ship	7	16	-	23
Survey Ship	8	1		9
Survey Launch				6
Cable Ship				3
Aircraft Transport				4
Netlayer	1	1	-	2
Tanker				42
Coastal Tanker				19
Tender				5
Stores Ship				10
Coastal Stores and Armament Carriers				10
Hospital Ship	1	-	-	1
Large tug (ocean-going)				33

* Data unavailable for shaded entries, only the total shown in last column.


Royal Navy dockyards and bases, 1952
Dockyards
Bases
Norwegian Sea
Barents Sea
NORTH ATLANTIC OCEAN
SOUTH ATLANTIC OCEAN
INDIAN OCEAN
Bermuda
Gibraltar
Malta
Bahrain
Hong Kong
Trincomalee
CEYLON
MALAYA
Singapore
SOUTH AFRICA
Simonstown
N
0
1,500 miles
0
1,500km
Scapa Flow
SCOTLAND
Rosyth
Rothesay
Londonderry
NORTHERN IRELAND
REPUBLIC OF IRELAND
ENGLAND
WALES
Harwich
Sheerness
Chatham
Portsmouth
Devonport
Portland
0
100 miles
0
100km

It was announced that many ships of the Reserve Fleet would be relocated from the main naval ports to Cardiff, Penarth, West Hartlepool and Greenock, and later Barrow, Barry and Lisahally (Londonderry), as a precaution against a nuclear attack.[4] At these ports they were dehumidified and maintained by contractors.[5] Other ports subsequently used included Pembroke and Rosneath.

Royal Navy personnel totalled 153,000. This included 14,800 officers, 120,800 ratings, 650 Royal Marine officers, 11,050 Royal Marine other ranks, 275 WRNS[6] officers, 5,200 WRNS ratings and 225 Queen Alexandra Royal Naval Nursing Service personnel.[7] In 1952 boys could enter at the age of 15 and at the age of 18 would sign on for 12 more years' service, after which they could re-engage for a further ten years. Each year about 4,000 men joined the Navy for two years' national service, a small number compared with those joining the Army. The last national service conscripts joined in 1960.

The standard age of entry for officer cadets to the Britannia Royal Naval College at Dartmouth was 16 (prior to 1948 it had been between 12 and 14). In 1955 the entry age was raised to 18.[8] During initial training at Dartmouth cadets would serve at sea for two periods as midshipmen in ships of the newly formed Dartmouth Training Squadron, which consisted of a destroyer, two fast frigates and two ocean minesweepers. After passing out of Dartmouth they would go to sea in ships of the active fleet for 18 months as acting sub lieutenants, following which they would be confirmed as sub lieutenants.[9]

After the war the Navy had returned to its more leisurely pre-war routines with an annual cycle of activities, as described in a contemporary recruiting booklet. For the Home Fleet this meant that after Christmas leave the fleet visited Gibraltar and North African ports before exercising with the Mediterranean Fleet. By the end of March the ships were back at their home ports 'laden with oranges, silk, Moorish leatherwork and all sorts of other spoil from North Africa and Spain' (this quote quite obviously comes from a recruiting booklet!).[10]

After Easter leave there was the spring cruise – usually to Madeira and the Canaries. By mid-May the fleet was at Portland for gunnery and torpedo training and the pulling regatta. Then, in June, the ships went off in ones and twos, some to the Baltic, others to Norway. Next, they visited British seaside resorts and finally steamed to Torquay for the sailing regatta, before returning to home ports for summer leave and Navy Days. The autumn cruise began in September when the fleet met at Invergordon for more gunnery and torpedo practice and football competitions, and then went to Rosyth for visits to Edinburgh. In November it was back to home ports for Christmas leave.[11]

The Mediterranean Fleet had two or three cruises a year, with regattas worked into them, visiting ports in the French Riviera, Monte Carlo, Italy, Algeria, Tunisia, Athens, the Greek Isles, Egypt, Cyprus and Rhodes. Five or six months were spent in Malta with fleet exercises, sporting events and shore leave.[12] Other squadrons were based in the Far East, East Indies, South Atlantic and West Indies. It really was true that you could join the Navy and see the world!

However, this apparently idyllic existence was not shared by all. In February 1952 British warships were actively engaged in the Korean War, which had started on 25 June 1950 when North Korea invaded South Korea. North Korea was supported by China and the Soviet Union, whilst South Korea was supported by a United Nations Command, including forces from the United States, the United Kingdom and 19 other countries.

There were few naval battles in this war, which was mainly conducted on land. A skirmish between ships of North Korea and the United Nations Command occurred on 2 July 1950: the cruisers HMS *Jamaica* and USS *Juneau* and the frigate HMS *Black Swan* fought four North Korean torpedo boats and two mortar gunboats, and sank them. Ships from the United Nations Command soon held undisputed control of the sea around Korea. The east coast was the prime area for ships of the US Navy and the west coast for ships of the British, Commonwealth and other allied navies, although deployments were sometimes made between the two coasts.

Aircraft carriers provided air support to the ground forces and destroyed enemy infrastructure. The other warships were principally used in shore bombardment of enemy troop positions

and infrastructure, but also patrolled the coasts of North Korea, sinking North Korean supply ships. Apart from very occasional gunfire from North Korean shore batteries, the main threat to UN Command ships was from magnetic mines. Five US Navy ships were lost to mines: two minesweepers, two minesweeper escorts and one ocean tug.[13]

In February 1952 British warships on station in the war theatre included the aircraft carrier *Glory*, the maintenance and ferry carrier *Unicorn*, the cruisers *Belfast* and *Ceylon*, the destroyers *Charity*, *Cockade*, *Concord*, *Constance* and *Cossack*, the frigates *Alacrity*, *Cardigan Bay*, *Mounts Bay* and *Whitesand Bay*, the hospital ship *Maine*, and the headquarters ship *Ladybird*. The aircraft carrier *Warrior* was employed as a ferry carrier, carrying troops, replacement aircraft and stores from the UK to Singapore and Japan. The British fleet was supported by RFA oilers and supply ships.

The aircraft carriers *Glory* and *Ocean* alternated on the station until the armistice. The cruisers *Birmingham* and *Newcastle*, destroyers *Comus* and *Consort*, frigates *Morecambe Bay*, *St Brides Bay*, *Amethyst*, *Crane*, *Modeste*, *Opossum* and *Sparrow*, and the destroyer depot ship *Tyne*, also had tours of duty there during 1952–53.

In action between 6 and 12 February 1952 *Glory* lost four aircraft with one pilot fatality. In March 1952 her aircraft flew 105 sorties in one day, a record at the time. This was later surpassed by *Ocean* with 123 sorties in one day, a figure equalled by *Glory* herself in April 1953, during her third and final tour. In August 1952 four of *Ocean*'s Sea Furies were attacked by eight MIG15s with one or possibly two MIGs downed, the only occasion when a piston-engined aircraft has shot down a jet; two Sea Furies were damaged, with no casualties.

Some idea of the havoc wrought by the aerial attacks can be gained from statistics provided for *Ocean*. During her two tours *Ocean*'s aircraft flew 7,964 sorties and, in addition to the MIG jet, 115 road bridges, 81 rail bridges, 61 railway wagons, 57 motor vehicles, 172 ox carts, 102 water transports, 69 gun batteries and positions, and 18 electrical installations, were destroyed; countless others were damaged. This was accompanied by a grim death toll: her pilots estimated that they had killed 1,000 North Koreans. As another example, the cruiser *Belfast* fired over 8,000 6-inch shells and was at sea for 404 days.[14]

The war ended unofficially on 27 July 1953 in an armistice. Royal Navy and Royal Marines casualties during the conflict were 57 killed, two died of wounds, ten missing, 85 wounded and 28 taken prisoner-of-war. Including four aircraft carriers and six cruisers, 34 Royal Navy ships had taken part in the war, as well as 16 RFAs, one hospital ship, nine Royal Australian Navy ships (including one aircraft carrier), eight destroyers of the Royal Canadian Navy and six frigates of the Royal New Zealand Navy.[15]

At the end of World War II the Soviet, British, French and US navies had obtained examples of new fast German U-boats and set about developing new fast submarines or converting existing boats to higher speed forms, such as the new Soviet Whiskey class and the British T-class conversions. The threat from the USSR was recognised with the formation of NATO in 1949, by which time the Soviets reportedly had a submarine fleet of over 300 boats with many more planned or under construction. The Royal Navy recognised the need for faster anti-submarine escorts but money for new construction was in short supply during the austerity years of the late 1940s and no new escorts would be laid down until 1952.

The solution was an ambitious plan to convert most of the surviving war-built fleet destroyers of the N to Z classes into fast anti-submarine frigates. The basic concept of the Type 15 (or 'full conversion') was a low silhouette to limit the effect of nuclear blast, good anti-submarine and gun armament, and excellent action information organisation facilities. The first two of 23 ships to be converted were commissioned in 1951, but the high specification meant that these conversions were expensive. To economise, ten destroyers were given 'limited conversion' to Type 16: the old superstructure was largely retained and the armament and equipment fit was less sophisticated than in the Type 15. A Type 18 'improved limited conversion' was designed to incorporate more features from the Type 15 and was to be applied to *Savage* and the N and Z classes. But the Type 18 concept was abandoned to concentrate on Type 15, though the number was restricted by budgetary constraints, and from these classes only *Zest* received the Type 15 conversion, whilst *Troubridge*, originally scheduled for Type 16 conversion, also received full conversion.[16]

The Korean War and the more general Cold War threat from the USSR prompted the resumption of new construction on a substantial scale. Work was resumed on six aircraft carriers and three cruisers, which were incomplete when their construction was suspended at the end of World War II. In 1951 orders were placed for six Porpoise-class submarines and 27 frigates – five Leopard class, four Salisbury class, 12 Blackwood class and six Whitby class. Because Soviet mining of British coasts and estuaries was thought to be a major threat, an ambitious programme of minesweeper construction was initiated. In 1950 17 coastal minesweepers were ordered, with another 27 in 1951 and 42 in 1952, a total of 116 being finally built. Also in 1950 21 inshore minesweepers were ordered and a further 40 in 1951, with more to follow. For inshore anti-submarine work 13 seaward defence boats were ordered in 1951 with five more in the following year, and 30 fast patrol boats were ordered in 1951 with another three in 1952. Orders for three fast fleet oilers were also placed in 1952.[17]

Two commissioning bases were created to accept into service all the new minesweepers and coastal forces, equipping them, conducting sea trials and then putting many of them into reserve. HMS *Hornet*, the coastal forces base at Gosport, dealt with the coastal forces whilst the former BOAC flying boat base at Hythe on Southampton Water (which was previously the works of the British Power Boat Company) was converted to become the minesweeper commissioning base HMS *Diligence*.[18]

Britain led the way in aircraft carrier technology during the fifties with the introduction of the angled flight deck – trialled in *Triumph* in 1952, the mirror landing-sight – trialled in *Illustrious* in 1952 and *Indomitable* in 1953, and developed into the deck landing projector sight, and the steam catapult – trialled in *Perseus* in 1950–52.[19] These innovations were introduced in all the British aircraft carriers completed in the fifties, although *Eagle* and *Centaur* initially had 'straight decks'. They were also adopted by the US Navy and all the other navies operating aircraft carriers, and greatly improved the safety of aircraft landing or taking off. The only war-built carrier to be fully modernised was *Victorious*, at Portsmouth between 1950 and 1958, but the cost was so ruinous that plans to modernise *Implacable* were abandoned.

In October 1952 the first test explosion of a British atomic bomb took place off the Monte Bello Islands, Western Australia, inside the frigate *Plym*, which had transported it from the UK without its radioactive components (which were taken to the site by air), sailing via Cape of Good Hope. The British special squadron also included the escort aircraft carrier *Campania* (flagship) and the landing ships *Narvik*, *Tracker* and *Zeebrugge*. They were joined by the Australian aircraft carrier *Sydney* and ten other ships of the Royal Australian Navy. All that was left of *Plym* afterwards was a 'gluey black substance' that washed up on the shore of Trimouille Island.[20]

In 1952–53 ships and motor launches of the Royal Navy patrolled the coast of Malaya to prevent gun-running and the illegal immigration of 'bandits'. In support of security forces operations, 39 bombardments by destroyers, frigates, minesweepers and HMMS *Pelandok*, and five air strikes from aircraft carriers, were carried out. These patrols continued in 1953–54.[21]

In May 1953 four boats of the 2nd Fast Patrol Boat Squadron (based at Gosport) visited Aarhus, Denmark. They moored alongside in a trot of four: *Gay Bombardier* on the jetty, then *Gay Fencer*, then *Gay Archer*, with FPB *1023* – a war-bult Vosper boat – on the outside. They all topped up their fuel from RFA *Airsprite*, which had accompanied them carrying the dangerous and not much-loved 100-octane aviation spirit. About 7am the following morning – Sunday 17 May – the leading stoker in FPB *1023* went into the engine room to start up the generator, which resulted in an explosion and fire. He was blown out through the hatch and, although injured, survived. FPB *1023* burnt fiercely and subsequently sank. *Gay Archer*, alongside her, caught fire and, because the crew operated the methyl bromide fire extinguishers as a preventative measure, couldn't run up her engines. Fortunately, none of the three newly built Gays exploded, possibly due to having full fuel tanks and thus no vapour in them. After some difficulty untangling from the berthing lines and the fire hoses laid across her deck from shore to play on FPB *1023*, *Gay Archer* drifted away across the basin, quite badly damaged and scorched by FPB *1023*'s fire. After two weeks of temporary repairs at Aarhus *Gay Archer* limped home, the final leg from Hook of Holland to Sheerness being spent battling into a westerly gale and

uncomfortable sea. Although listed in the programme for the imminent Coronation Review, she was in no state to attend.[22]

15 June 1953 saw the biggest concentration of British warships of postwar years, the spectacular assembly at Spithead for the Coronation Review of the Fleet. The despatch vessel *Surprise* served as the royal yacht (since *Britannia* had not yet entered service), and, with the queen aboard, sailed out of Portsmouth at 3pm as rain clouds cleared and the sun broke through the remaining clouds. The saluting guns of the fleet thundered out across the water as *Surprise* approached the eastern end of the fleet, and with each round a puff of smoke made a brief mark against the sky.

Surprise, closely followed by the frigate *Redpole* as Admiralty yacht, then sailed down the lines of British, Commonwealth and foreign warships, and British auxiliaries and merchant ships. At the head of the lines was the battleship *Vanguard* (flagship of the Home Fleet). The other Royal Navy ships present were six aircraft carriers, one aircraft maintenance carrier, eight cruisers, two fast minelayers, four Darings (which were not classed as destroyers at the time, so that they could all be commanded by full captains), 24 destroyers, 38 frigates, 28 submarines, six depot ships, six amphibious warfare ships, 16 ocean minesweepers, 12 motor minesweepers, three survey ships, seven fast patrol boats, 31 other vessels, and five Royal Fleet Auxiliaries, all dressed overall. There were also 13 Commonwealth and 16 foreign warships, 29 British merchant ships and 21 miscellaneous vessels. The review was followed at 5.35pm by a flypast of over 300 naval aircraft – Attackers, Sea Furies, Avengers, Sea Hawks, Sea Hornets, Fireflies, Skyraiders and Meteors, and Dragonfly helicopters. In the evening the fleet was illuminated, with each ship etched in lights against the night sky, and there was a grand fireworks display.[23]

In October 1953 the cruiser *Superb* and frigates *Burghead Bay* and *Bigbury Bay*, all serving on the North America and West Indies Station, were sent to British Guiana after embarking troops who had been flown out to Jamaica. The colony had elected a new governing party under prime minister Cheddi Jagan, who was suspected by British prime minister Winston Churchill of being a communist. Royal Marines and troops of the Argyll and Sutherland Highlanders were sent from the UK as reinforcements, aboard the aircraft carrier *Implacable* (which had been converted to a training ship with extra accommodation erected in her hangars). On 9 October, Britain suspended British Guiana's constitution, fired its legislators and arrested Jagan and his wife. A new transitional government was installed.[24]

Completed in January 1954, the royal yacht *Britannia* was to serve until December 1997, having completed 968 official visits, calling at more than 600 ports in 135 countries. She was the last in an unbroken succession of royal yachts dating back to the reign of Charles II, and was also the last RN ship in which some ratings slept in hammocks (until 1973[25]).

Prior to 1954 ships were either on home sea service or foreign service (the latter being in ships based overseas, e.g. Malta and Singapore). A rating would spend 30 months on a foreign service commission, and if married would normally be accompanied by his family. In 1954 general service commissions were introduced for warships, which split the time spent in the new 18-month commission between overseas and home service, with no more than 12 months spent overseas. This applied to cruisers, destroyers and frigates, the cruiser *Glasgow* being the first to adopt the new system. Aircraft carriers would serve two-year commissions, with two periods each of up to eight months overseas. One effect of this was to reduce the number of ships on home service only. Ships on foreign service alone (which applied in the Persian Gulf and Far East) would serve an 18-month commission. These changes would reduce the time spent by personnel in foreign service (afloat or ashore), which had been for up to 30 months at a time. Longer periods abroad would only be spent by men accompanied by their families in married quarters.[26] This was intended to help retention of personnel. Other forms of service were home sea service – afloat in home waters only, e.g. Home Fleet and ships engaged in trials and training, and port service – ashore at home or in ships operating from one port or in the reserve fleet.

The new system of shorter commissions was followed in 1957 by centralised drafting to help ensure improved manning of ships and shore establishments and fairer shares of duties ashore and

afloat. Previously general service ratings had been allocated, on entry, to one of the three manning ports, Portsmouth, Devonport and Chatham, and would only be drafted to ships and shore bases which were manned from their own port. Under the new system a man still had a preferred home port but was eligible to serve wherever men of his rating were needed.[27]

During the fifties the standard of naval catering was improved as smaller ships such as destroyers and frigates went over from the mess catering system, undertaken by the ratings themselves using the basic provisions issued and supplemented by items bought through a small daily victualling allowance, to centralised catering with dining halls and trained cooks.[28] Sleeping accommodation was improved too, as hammocks were phased out in favour of bunks.[29]

In June 1953, the A-class *Andrew* became the first submarine to cross the Atlantic submerged for the entire voyage, leaving Bermuda and surfacing at 2am on 15 June in the English Channel before berthing at Portland. This was timed to add to the good news stories, such as the conquest of Everest, which appeared in the month of the queen's coronation and the fleet review. Whilst sailing at periscope depth *Andrew*'s snort mast was used to draw fresh air into the boat, allowing her two diesel engines to be run. During the 2,500-mile voyage one of these engines broke down and was out of service for two and a half days whilst it was repaired, and the main periscope malfunctioned. The submarine had been returning from a deployment with the Royal Canadian Navy.[30] The snort had been fitted to British submarines in the late 1940s: originally a Dutch invention it was fitted to German U-boats during World War II. Although similarly equipped, at the time of her Atlantic crossing *Andrew* had not otherwise been modernised. A programme of extensive modernisation and streamlining of T-class submarines had begun with *Taciturn* in 1951 giving her increased underwater speed and quieter operation, introducing concepts that had been developed in German U-boats. Conversion of the A-class boats began with *Artful* in 1955.

In the fifties submarines were frequently sent on top secret patrols in the Barents Sea, on espionage missions. They tracked Russian submarines and observed Russian warships at close quarters, gathering intelligence about their radar and weapon systems, manoeuvrability, tactics, and sonar signatures, and listening to Soviet wireless transmissions. Soviet countermeasures often presented risks to the boats. Perhaps the first such operation was mounted by *Totem* in the Barents Sea in autumn 1954, following successful surveillance by British submarines of Soviet ships in the Mediterranean. *Totem* was depth-charged as she left her patrol area, putting her periscopes and snort out of action.[31] On a similar patrol in 1955 *Turpin* sustained damage to her fin and casing when she snagged her fin on a mine cable and was depth-charged by a Soviet warship, after crash-diving to avoid ramming.[32]

On 16 June 1955, the submarine *Sidon* (with 56 officers and crew) was alongside the depot ship *Maidstone* at Portland with two experimental high-test hydrogen-peroxide-powered torpedoes aboard. An explosion occurred in one of the torpedoes (but not the warhead), bursting the torpedo tube into which it had been loaded and rupturing the two forward-most watertight bulkheads. Fire, toxic gases and smoke accompanied the blast. Twelve men in the forward compartments died instantly and seven others were seriously injured. *Sidon* started to settle by the bows, and her commanding officer ordered evacuation from the engine room and aft escape hatches. Everyone not immediately killed escaped, except *Maidstone*'s medical officer who had gone aboard with a rescue party and suffocated because he was using a Davis Submerged Escape Apparatus that he had not been trained to use.[33] *Sidon* quickly sank to the bottom of the harbour but was later refloated, and on 14 June 1957 was sunk to act as a target. The experimental torpedo programme was terminated, and the torpedoes taken out of use, by 1959.

In July 1956 President Nasser of Egypt seized and nationalised the Suez Canal, which was owned by British and French holdings in the Suez Canal Company. This sparked a diplomatic row, culminating in Operation *Musketeer*, which involved the invasion of Egypt. The operation aimed to capture the town of Port Said at the northern entrance to the canal, before defeating the Egyptian army in the desert and forcing Nasser's removal from power.

The Anglo-French task force assembled for the operation was formidable, including aircraft carriers, a battleship, cruisers, destroyers, frigates, minelayers, minesweepers and landing ships. Anglo-French strikes and aerial bombing of Egyptian installations were initiated on 31 October. The naval strike force was led by the aircraft carriers *Eagle*, *Albion* and *Bulwark*, flying Sea Venoms and Sea Hawks, the French aircraft carriers *Arromanches* and *La Fayette* flying Corsairs, and the French battleship *Jean Bart*.[34] The Egyptian frigate *Domiat* was sunk in the Red Sea by the cruiser *Newfoundland* and destroyer *Diana* during the night of 31 October/1 November. By this time Israeli forces had invaded Egyptian territory on the Sinai Peninsula, and advanced towards the Canal, taking the whole peninsula.

Fleet Air Arm Sea Venoms and Sea Hawks, armed with rockets and cannon, attacked troop concentrations, oil fields, aircraft and vehicles. RAF Valiants and Canberras flying from Cyprus and Malta attacked airfields and military installations.[35] By nightfall on 1 November Egypt's air force had been destroyed, with the loss of 200 aircraft. Between 1 and 6 November *Eagle* launched 621 sorties, whilst *Albion* and *Bulwark* launched 415 and 580 respectively, and the French carriers launched 166.[36] On 4 November aircraft from the British carrier force attacked three enemy patrol boats heading for Alexandria. Two were sunk and the third, though damaged, was allowed to pick up survivors from the other boats and was seen making its way to harbour.[37]

The invasion of the canal zone by parachute troops, and troop and tank landings from landing craft and landing ships at Port Said and Port Fuad began on 5 November. Commandos were also landed by Whirlwind helicopters from the repurposed British aircraft carriers *Theseus* and *Ocean*, in the first ever operation involving helicopter-borne assault: 415 Royal Marines were landed as well as 23 tons of stores. The British and French troops faced strong opposition but soon took control of the area around the canal.[38]

Under mounting international criticism, notably from the United States, and Russian threats to intervene on behalf of Egypt, Britain declared a ceasefire on 6 November and, as mandated by a United Nations resolution on the following day, the troops had to make a humiliating withdrawal by 22 December. British casualties in the campaign stood at 16 dead and 96 wounded (including nine and 60 Royal Marines respectively).

As well as those mentioned above, Royal Navy ships involved in the Suez campaign included the cruiser *Jamaica*, minelayer *Manxman*, destroyers *Armada*, *Chaplet*, *Chevron* and *Duchess*, frigate *Crane*, depot/HQ Ships *Forth*, *Tyne*, and *Woodbridge Haven*, LST (tank landing ships) *Lofoten* and *Striker*, LCT (tank landing craft) *Bastion*, *Portcullis* and *Sallyport*, salvage vessel *Kingarth* and RFA *Brown Ranger*. Once the conflict had ended Royal Navy minesweepers, boom defence vessels and salvage vessels were heavily involved in clearing the canal of wreckage.[39]

After the Suez crisis the prime minister of Ceylon requested the removal of all British forces from the country because his government had disagreed with Britain's Suez policy. The dockyard and Admiralty House at Trincomalee were handed over to the Royal Ceylon Navy on 15 October 1957, the flag of the Commander-in-Chief East Indies Station was lowered over the shore establishment HMS *Highflyer*, and the next day the last flagship, the cruiser *Gambia*, left Trincomalee.[40] The frigates and minesweepers on the station, which were serving in the Middle East, were transferred to the new joint services command at Aden.[41]

In 1952 at the coastal forces base HMS *Hornet*, Gosport, there were two squadrons – one of the 'short' 70ft Vosper and 'long' Fairmile D motor torpedo boats, and the other of the British Power Boat Proud type – plus a few experimental craft. Between 1952 and 1957 new boats of the Bold, Gay and Dark classes replaced these war-built craft and a development programme for the new gas turbine-powered Brave class was put in hand. In 1955–56 16 fast patrol boats, as the craft were now designated, were stationed at *Hornet*. However, in 1956 the decision was made to axe coastal forces. Earl Mountbatten, the First Lord of the Admiralty, later defended the decision, saying that coastal forces were only of use in a global war, whereas 'with their comparatively limited endurance their usefulness in other kinds of war is at best problematical, and they can make no contribution to the winning of the Cold War.' *Hornet* paid off in September 1957 and with it most of the fast patrol boats. The residual activity – a small trials and special service squadron – moved to HMS *Dolphin*, the adjacent submarine base.[42]

In 1956 it was decided that large numbers of ships in the lowest category of reserve (known as extended reserve, ships of which were not maintained) would be sold or scrapped. The number of ships in operational reserve, the highest category of readiness, would be increased through an intensified programme of refitting. An intermediate category was supplementary reserve, ships which were maintained but not kept in such a high standard of readiness. In the 18 months between May 1957 and November 1958 59 ships and submarines were scrapped or expended as targets, excluding small vessels.[43] In 1958 a policy on the size of the reserve fleet stated: 'It is proposed to follow the principle that the Reserve Fleet should comprise only sufficient ships to keep the Active Fleet up to strength, allowing for accidents and long refits.'[44] This probably only related to the operational reserve category because in the years that followed (at least into the early sixties) the combined operational and supplementary categories were maintained at a significantly larger size than this statement would suggest.

The April 1957 Defence Review led to further, savage cuts in the strength of the Navy. The battleships *Anson, Howe, Duke of York* and *King George V*, the aircraft carriers *Illustrious*, *Glory*, *Warrior*, *Ocean* and *Theseus*, the aircraft maintenance carriers *Unicorn* and *Perseus*, and the cruisers *Liverpool*, *Glasgow*, *Bellona*, *Cleopatra*, *Dido*, *Euryalus* and *Cumberland*, were all to be scrapped. All of these, except *Ocean*, *Warrior* and *Cumberland*, were, at the time, in reserve. There were large cuts to other elements of the Reserve Fleet: six destroyers, 40 frigates, 20 ocean minesweepers, and a variety of other ships and submarines, were to be disposed of.[45] The total number of naval personnel would reduce by 7,000, to 121,000 in 1957–58. Some 2,000 officers and 1,000 ratings were to be 'prematurely released' – in the event all were voluntary, the other reductions being made through ending national service conscription and the normal termination of engagements. There would be further cuts of 20,000 or more over the next four years.[46]

Many shore establishments and the royal dockyards at Sheerness and Hong Kong would close, and the Simonstown base was handed over to the South African Navy on 2 April 1957 but would still be used as a base for frigates on the South Atlantic station.[47] Similarly, a naval base would be retained in Hong Kong after the dockyard closed in 1959.[48] The royal dockyard at Malta was handed over to Messrs C. H. Bailey, of South Wales, a civilian firm of ship repairers and marine engineers, on 30 March 1959. Malta remained a naval base and for a number of years the yard continued to carry out repairs to British warships until they were finally withdrawn from Malta.[49] Sheerness Royal Dockyard closed on 31 March 1960.[50]

The defence review had been presaged by demands made in 1956 for big economies amongst the armed forces, to which the Admiralty had responded with 'The Way Ahead' paper. Amongst the shore establishments which would be closed was the famous wartime base in Scapa Flow: at HMS *Pomona*, Lyness, on 29 March 1957, a grey, cold day, the White Ensign was finally hauled down by 19-year-old Ordinary Seaman Ronald Henry, the youngest rating in the boom defence vessel, HMS *Barleycorn*, the only naval ship present. The gunnery schools and signal schools at Chatham and Devonport, the torpedo and anti-submarine school at Devonport (HMS *Defiance*), the mechanical and training repair establishment housed in the repair ship *Alaunia* at Devonport, the naval air navigation and direction training establishment HMS *Harrier* at Kete, Pembrokeshire, the Royal Marines barracks at Chatham, several scientific establishments, and numerous stores depots, were also casualties of the cuts.[51]

Simultaneously it was announced that the Royal Fleet Reserve (RFR) was to be massively reduced – from 25,000 to 5,000 personnel. They were former regular Royal Navy personnel, who had mostly served seven-year special service engagements which were followed by five years in the RFR, including one week of refresher training each year, being paid an annual retainer of £18–£27 depending on rank. The personnel affected were transferred to other reserves where a retainer was not paid.[52] On 1 November 1958 the Royal Naval Reserve (RNR, open to professional officers and seamen in the merchant navy) and Royal Naval Volunteer Reserve (RNVR, open to civilians, who may or may not have sea experience) were amalgamated to form the new RNR.[53]

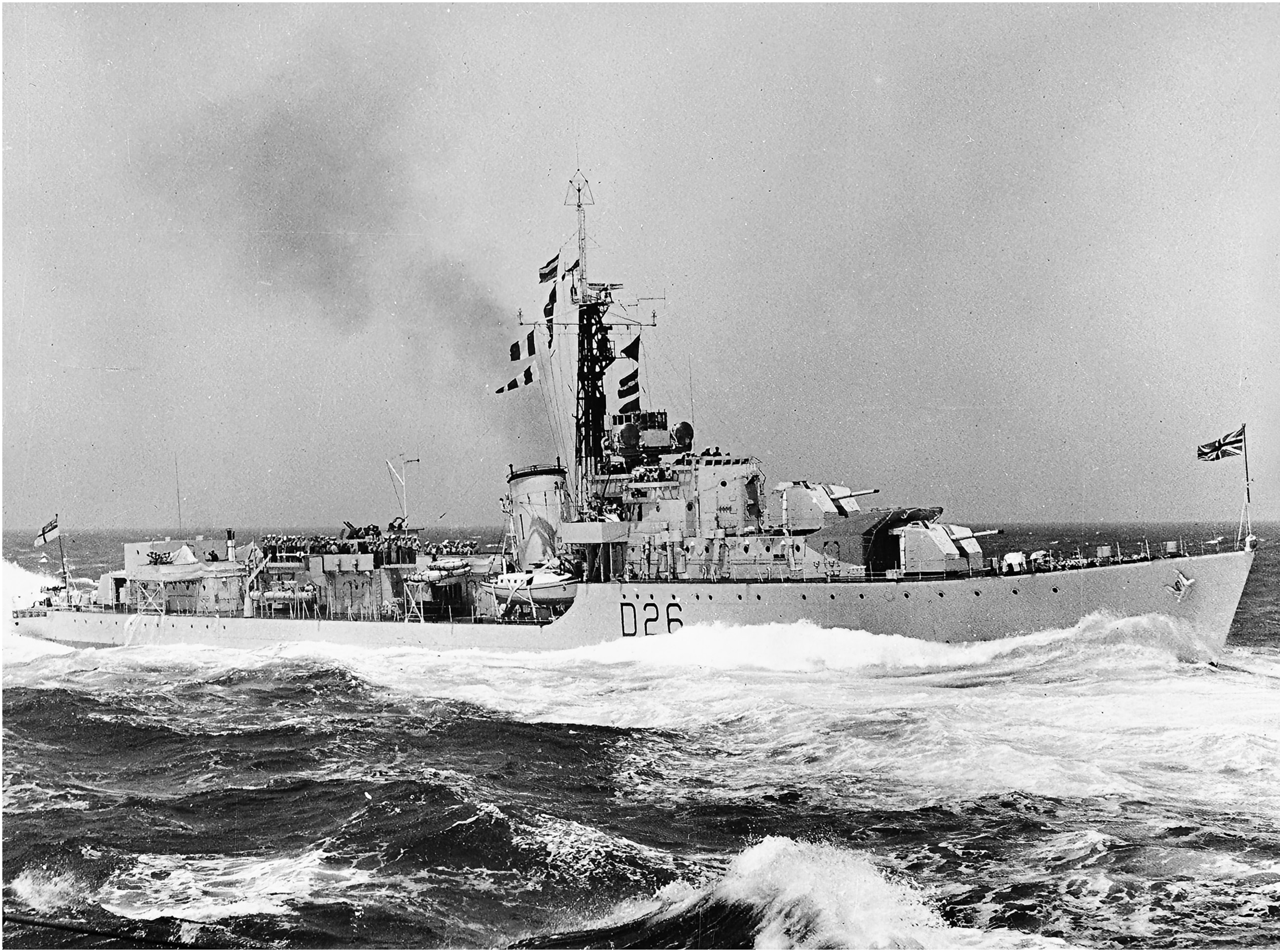
In September 1958, under the Flag Officer Sea Training, a system of intensive training programmes was introduced for crews in newly commissioned warships. Based at Portland, and known as Basic Operational Sea Training (BOST), it typically lasted seven weeks. This resurrected an idea used very successfully at Tobermory in World War II for newly manned anti-submarine escorts.[54] A system for ships which needed more training part-way through a commission, known as Continuation Operational Sea Training (COST), was later added. These systems or similar are still in use today.[55]

The first 'Cod War' started on 1 September 1958 after Iceland unilaterally expanded its fishery zone from 4 to 12 nautical miles. Britain did not recognise the new limit and her trawlers continued to fish inside it, supported by ships of the expanded Fishery Protection Squadron. This led to conflict and rammings of trawlers by Icelandic warships. On 1 September the frigates *Eastbourne*, *Russell* and *Palliser*, and the ocean minesweeper *Hound*, were on patrol off Iceland when the Icelandic patrol vessels *Aegir*, *Albert*, *Odinn*, *Thor* and *Maria Julia* appeared and started harassing British trawlers, threatening and trying to arrest them. In early skirmishes *Eastbourne* freed several arrested trawlers and captured two Icelandic boarding parties. On 4 September *Aegir* attempted to arrest a British trawler off the Westfjords but was thwarted when *Russell* intervened, and the two vessels collided. On 6 October, the *Maria Julia* fired three shots at the trawler *Kingston Emerald*, forcing the trawler to escape to sea. On 12 November *Thor* encountered the trawler *Hackness*, which had not stowed its nets legally. *Hackness* did not stop until the patrol vessel *Thor* had fired two blanks and one live shell off its bow. Once again, *Russell* came to the rescue, and ordered the Icelandic captain to leave the trawler alone, as it was not within the 4 nautical mile (nm) limit recognised by the British government. The captain of *Thor* refused and approached the trawler with the gun manned. In response, the *Russell* threatened to sink the Icelandic vessel if it fired a shot at the *Hackness*. More British warships then arrived, and the *Aegir* retreated.

There were many other skirmishes, in some of which the Icelandic ships fired solid shot, and on at least one occasion the superstructure of a trawler was hit. Using a powerful lever to influence events, Iceland threatened to leave NATO and cease to host US forces and facilities on its territory. In late February 1961, following a United Nations conference, the UK and Iceland reached a settlement which agreed the 12nm Icelandic fishery limits, but Britain would have fishing rights in allocated zones during certain seasons in the outer 6nm for three years. The first Cod War was finally over on 11 March 1961, when the Icelandic parliament approved the settlement. In all there had been 84 serious attempts to arrest British trawlers but due to the protection given by Royal Navy ships none had been successful. The Navy had deployed 63 warships and ten RFAs to the area during the 30 months of the dispute.[56]

At the close of the decade the first steps towards a new era for the Navy were being taken. The destroyer *Decoy* was in dockyard hands being fitted with the Seacat guided missile system, for which she would be the trials ship. Trials of the Seaslug guided missile system, aboard the converted maintenance ship *Girdle Ness*, were well advanced, having started in 1956. In March 1959 the keels of *Devonshire* and *Hampshire*, the first guided missile destroyers, which would be armed with both Seaslug and Seacat, were laid. And three months later, on 12 June, the keel of the Navy's first nuclear-powered submarine, *Dreadnought*, was laid.

RIGHT • HMS *COMET*
The destroyer *Comet* was the first ship of the eight CO class to be completed (in her case by Yarrow, Scotstoun, in June 1945). They were the thirteenth of 14 fleet destroyer flotillas ordered during World War II to the evolving 'emergency programme' design. Here *Comet* displays some of her postwar modifications: her 'X' position 4.5-inch gun has been replaced by two Squid anti-submarine mortars, the forward bank of torpedo tubes has been landed, and she has been fitted as a minelayer with mine rails aft. She was in reserve 1950–53, and then refitted between June and December 1953 for Home Fleet/ Mediterranean general service commissions with the 6th Destroyer Squadron. In early November 1956 her squadron was in home waters but was deployed to the Mediterranean to stand by in case it was needed for the Suez campaign. *Comet* was paid off at Devonport in January 1958, entering low category reserve, and was sold for breaking up in 1962. (© IWM HU 129777)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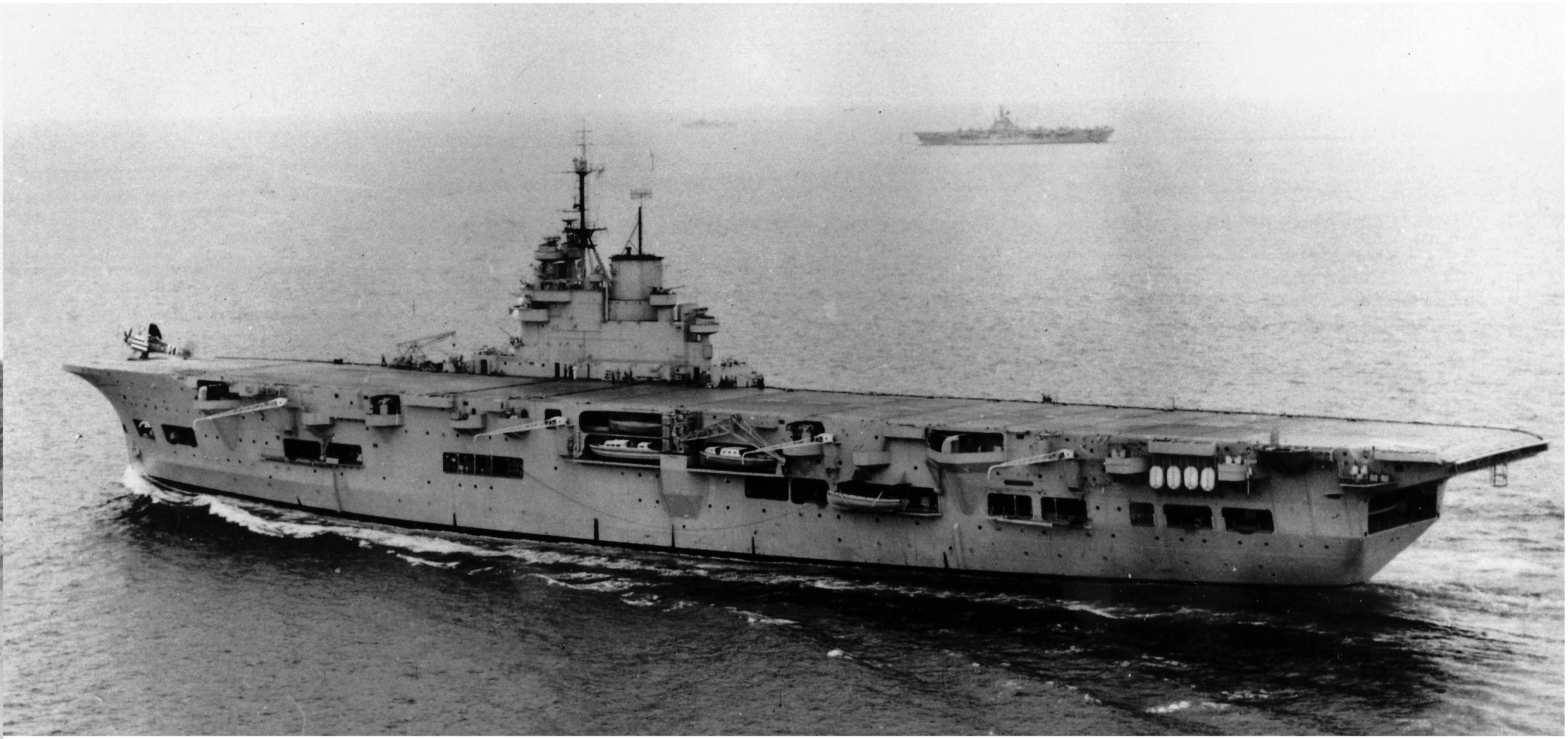
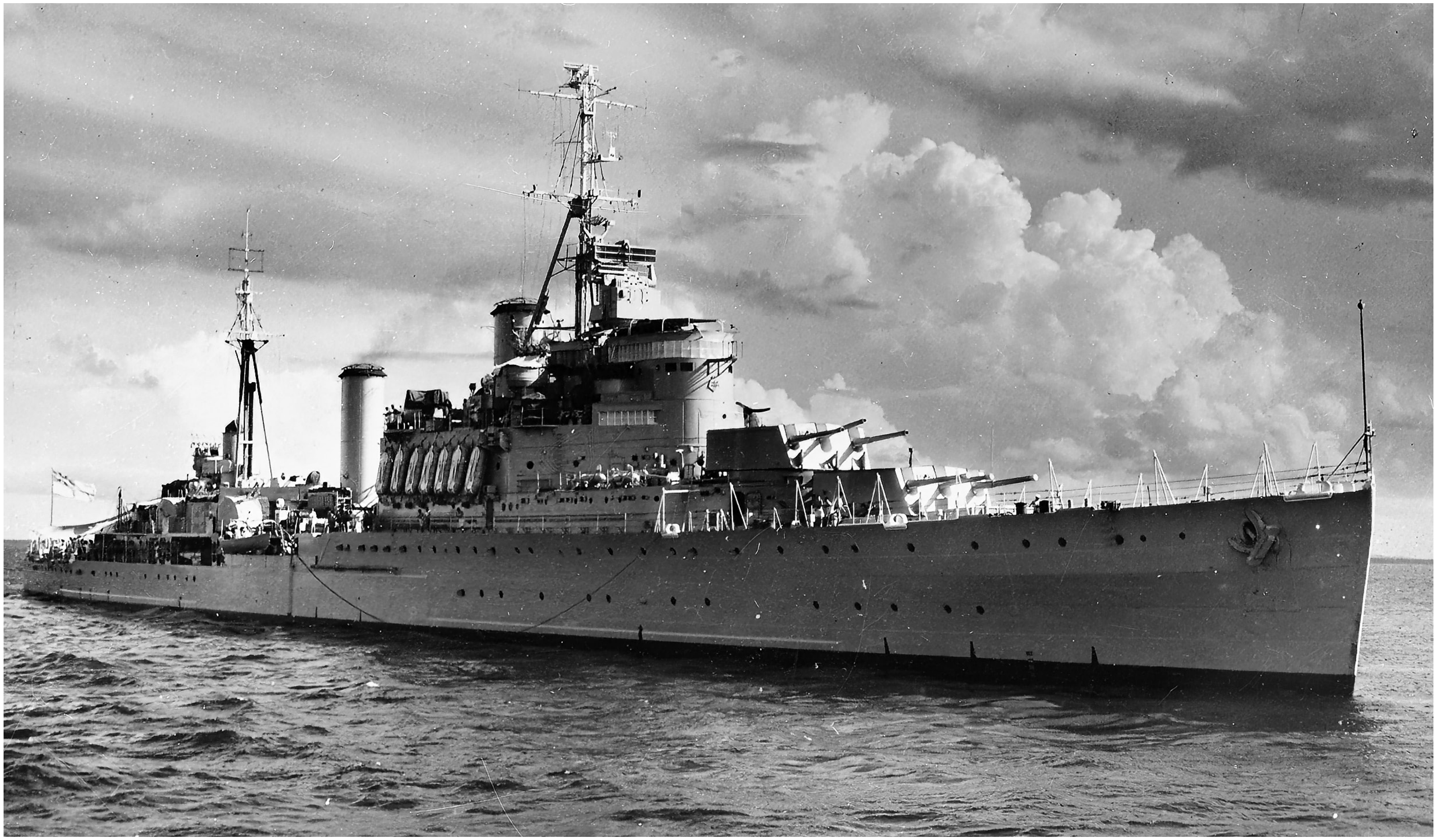


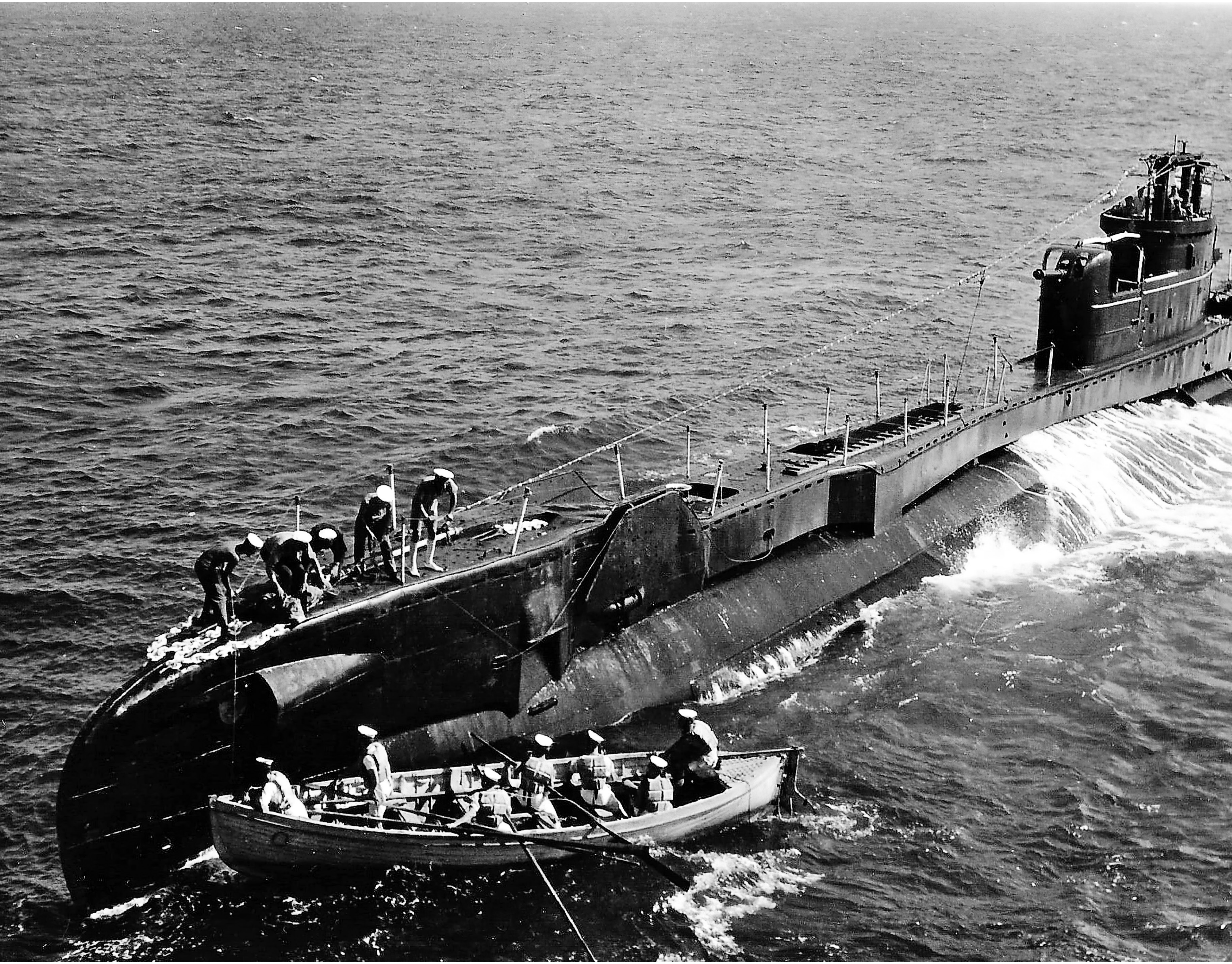
LEFT • HMS *OCEAN*
Ocean, a light fleet aircraft carrier of the Colossus class is seen at Sasebo, Japan, during the Korean War, with her ship's company at ease on the flight deck. The US Navy's base at Sasebo was used by British and Commonwealth warships during that conflict. *Ocean*'s air group comprised Sea Furies and Fireflies, and two Dragonfly helicopters. Like her sister ships *Theseus*, *Triumph* and *Glory*, she spent periods on station off Korea, and during two tours her aircraft flew 7,964 sorties. After Korea she was modified to serve as a training ship in the Home Fleet Training Squadron, relieving *Indefatigable* in August 1954. For the 1956 Suez campaign *Theseus* and *Ocean* were hastily modified as helicopter carriers and, in Operation *Musketeer*, Royal Marines of 45 Commando were landed by Whirlwind helicopters from the two carriers in the first ever operation involving helicopter-borne assault. *Ocean* had been built by Alexander Stephen, Linthouse, and completed on 8 August 1945. Paid off in 1958, she was scrapped at Faslane in 1962. (Royal Navy Image Archive)

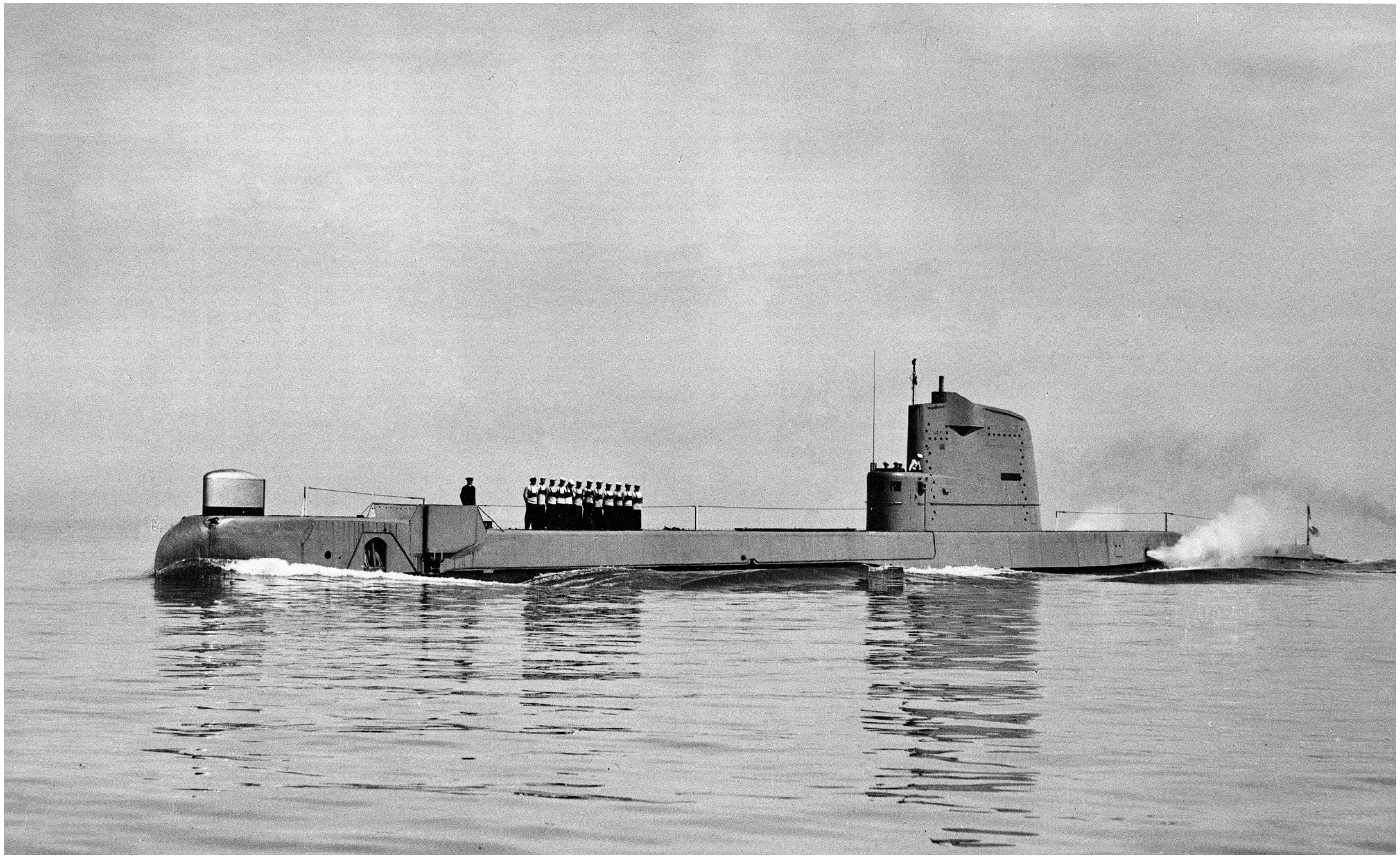
ABOVE • HMS *UNICORN*
The aircraft repair ship *Unicorn* was built and engined by Harland & Wolff, Belfast, to an innovative design concept which allowed her to fulfil, for aircraft carriers, a similar function to that performed by depot ships for destroyers and submarines. She was better equipped for aircraft repairs than the normal aircraft carriers, and could repair aircraft of all types, including amphibians. Her full-length flight deck and catapults allowed aircraft to land and take off from her. In addition to her primary role, she acted as an aircraft transport and, in Korean War operations, worked alongside aircraft carriers, providing an additional deck onto which damaged aircraft returning from sorties could land directly, and carried a reserve of aircraft and aviation stores. Originally completed in 1943, she was in theatre for the entire period of hostilities during the Korean War. On one occasion her four twin 4-inch guns were used for shore bombardment of a North Korean position. Placed in reserve in November 1953, she was sold for scrapping in 1959.
(Royal Navy Image Archive)



ABOVE • HMS *KENYA*
The Fiji-class cruiser *Kenya* was built by Alexander Stephen, Linthouse, who completed her on 20 August 1940. In 1950–51 she was based at Sasebo, Japan, for war patrols off the west coast of Korea. Thereafter she served in the 4th Cruiser Squadron, East Indies station, until October 1952 when she joined the Mediterranean Fleet's 1st Cruiser Squadron. In February 1953 she returned home, to be placed in reserve at Rosyth. She recommissioned in August 1955 for the North America and West Indies station before redeploying to the Red Sea in July 1956, after the nationalisation of the Suez Canal by the Egyptian government, and remained in the Aden/Persian Gulf area, to deal with any emergency. In October 1956, despite the planned landings at Suez, she was ordered to return to the UK. Her final commission in 1957–58 was on Home/Mediterranean service. She arrived at Portsmouth on 24 July 1958 and paid off there for the last time in September. (© IWM A 31696)

RIGHT • HMS *LIVERPOOL*
The Southampton-class cruiser *Liverpool* was one of eight ships of the class ordered in 1934 and 1935, in her case from Fairfield, Govan, who completed her on 1 November 1938. The Southamptons were highly successful cruisers, which had been designed following the 1930 London Naval Treaty to take best advantage of the rules for light cruisers, (i.e. those armed with 6-inch guns or less). They were more powerful than earlier British light cruisers, mounting 12 6-inch guns in four triple turrets (one of which was replaced by light anti-aircraft armament in *Liverpool* in 1943). From 1945 until 1952 she served in the Mediterranean as flagship of the 1st Cruiser Squadron and was often flagship of the Mediterranean Fleet. On 16 April 1952 she left Malta for the last time and arrived at Portsmouth eight days later to pay off into reserve there. Under the 1957 Defence Review she was earmarked for disposal and was sold for breaking up in the following year. (Royal Navy Image Archive)





LEFT • HMS *TABARD*

The T-class submarine *Tabard* is seen in more-or-less her original form, with the addition of a 'snort' mast (here lowered on deck, aft of the fin). She retains her external torpedo tubes, two in the bow (one of which is clearly visible) and three firing aft, and her 4-inch gun. Introduced in 1938, her class proved to be highly successful ocean-going boats. Launched on 21 November 1945 by Scott's, Greenock, and completed in June 1946, *Tabard* was the last of her class to enter service. She is seen here whilst serving in the 1st Submarine Flotilla based in Malta, and in May 1953 was to be taken in hand at Chatham Dockyard for a major modernisation, from which she emerged in November 1955. From 1960 to 1968 she served in the 4th Submarine Division at Sydney, Australia, before returning to Gosport on 11 June 1968 to pay off. She was used then as a static training submarine at HMS *Dolphin*, 1969–74, and was sold for breaking up in 1974. (Author's collection)

ABOVE • HMS *TACITURN*

Taciturn was the first of eight T-class submarines, which all had welded hulls, to be given a 'conversion', in Chatham Dockyard, in her case between November 1948 and June 1950. The scale of her transformation can be judged by comparing this picture with that of *Tabard*. She was lengthened by about 20ft to provide space for two more electric motors and an additional battery section, the hull casing was streamlined, the gun and external torpedo tubes were removed, and the fin was enlarged and heightened to enclose her periscopes and masts. Her underwater speed increased from 9 to 15 knots, an impressive improvement, and she had an operational diving depth of 350ft. Originally completed in October 1944, *Taciturn*'s war service was in the Far East. Her final service was in the 4th Submarine Division at Sydney, Australia, from December 1962, and on 18 November 1966 she returned to Gosport to pay off for the last time. (Royal Australian Navy)

ABOVE • HMS *IMPLACABLE*

Implacable, seen in 1952, was one of six war-built fleet aircraft carriers of the Illustrious class, the design of which evolved as successive ships were ordered. The last two ships – *Implacable* and *Indefatigable* – were provided with two levels of hangars, increasing the number of aircraft to 60, but both hangars were of 14ft height, which limited the types of aircraft that could be stowed. Completed in August 1944, *Implacable* joined the Home Fleet, taking part in operations against coastal shipping and airfields in Norway. In April 1945 she joined the British Pacific Fleet and was engaged in strikes on Japan. From 1952 to 1954 she served as Flagship of the Home Fleet Training Squadron, with additional accommodation on her hangar decks and no air group. In October 1953 Royal Marines and troops of the Argyll and Sutherland Highlanders were sent to British Guiana aboard *Implacable* to facilitate a change of government there. A plan to modernise her was dropped, and she was sold for breaking up in 1955. (Author's collection)

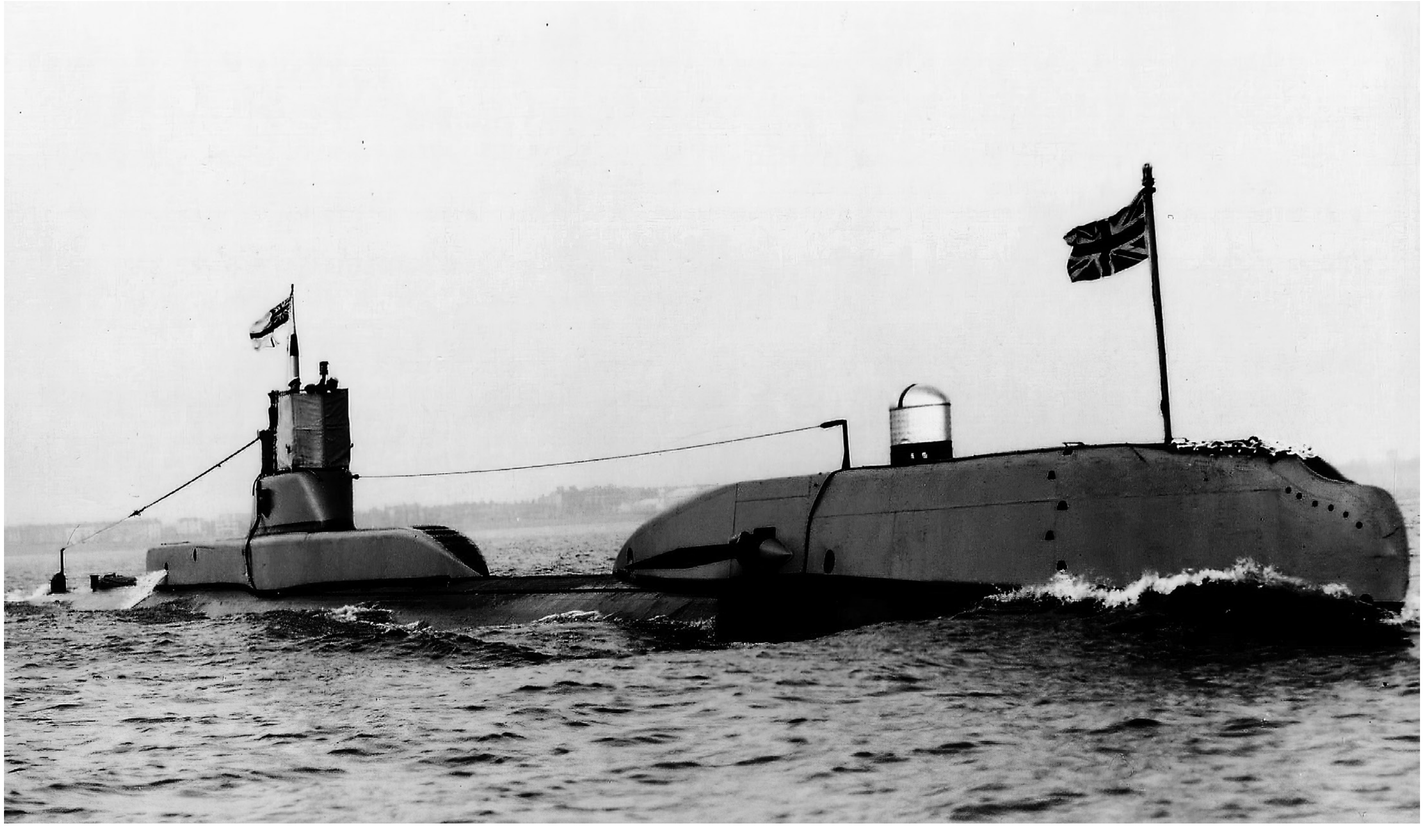
RIGHT • HMS *ILLUSTRIOUS*

Ordered in 1936 as part of the rearmament programme, *Illustrious* was completed by Vickers-Armstrongs at Barrow in May 1940, as the first of six new fleet aircraft carriers, and saw extensive war service in the Mediterranean, Indian Ocean and the Pacific. In the late forties she was modernised (1945–46) and used as a trials and training carrier, with a reduced ship's company, in order to maintain her suitability for frontline use in an emergency. In September 1952 she embarked an operational air group of Firefly and Dutch Sea Fury aircraft for Exercise *Mainbrace*, the largest NATO exercise to that date. She is photographed at that time. In June 1953 she was in the line of aircraft carriers at the Spithead Coronation Review of the Fleet. Her last training cruise, for reserve aircrew, was in 1954, and in December of that year she was laid up in reserve in Gareloch. In November 1956 she was sold for scrap and was subsequently broken up at Faslane. (Author's collection)

LEFT • HMS *DARING*
Daring was the lead ship of the Daring-class destroyers, which represented the culmination of 60 years of British destroyer development, and was the last class before the very different guided missile destroyers. They were the largest and most powerful destroyers to date and, like the earlier Weapon class, had alternating boiler and engine rooms which led to two widely spaced funnels (one of them enclosed by the lattice foremast). Although this arrangement gave increased survivability, the ships' appearance was considered bizarre and certainly less handsome than the earlier war-built types. They were the first operational ships to mount the new Mk 6 4.5-inch guns, with three twin mountings as their main armament, and also had two quintuple banks of torpedo tubes. Between 1953 and 1957 they were reclassified as 'Darings' and not included in the destroyer total, so that they could all be captains' commands. *Daring* was built by Swan Hunter, Wallsend, and accepted into service on 2 February 1952. She was finally decommissioned in October 1968. (Royal Navy Image Archive)

ABOVE • HM FPB *1023*
1023, pictured in September 1952, was ordered in December 1943 as the motor torpedo boat MTB *523* from Vosper, Portsmouth, and completed in July 1945, too late to see war action. Wooden-hulled, with three Packard V12 petrol engines, she had a top speed of 39 knots, and was typical of the later 'short' Vosper 73ft MTBs of World War II, about 12 of which were retained for postwar frontline service, based at HMS *Hornet*, Gosport. They were armed with two 18-inch torpedo tubes, one twin 20mm Oerlikon gun and one quick-firing 6-pdr (57mm) gun (though this gun is not mounted in this view). Unfortunately, *1023* came to an untimely end when alongside on a visit to Aarhus, Denmark in May 1953 with other units of the 2nd Fast Patrol Boat Squadron. The dangerous and not much-loved 100-octane aviation spirit which fuelled her engines caused an explosion, a fire burnt fiercely, and she subsequently sank. Fortunately, there was no loss of life. (© NMRN)

P 1598



LEFT • HMS *PROUD PATROLLER*
Proud Patroller (pictured in the Solent in July 1952) was built as the 'short' 72ft motor torpedo boat MTB *498* by British Powerboat Company (BPB), at Hythe near Southampton, and completed in August 1945, too late to see war action. She was nevertheless representative of the many motor torpedo boats and motor gunboats built by BPB during World War II. Most were sold soon after the war ended, but nine boats were retained, and in 1952 were given 'Proud' names, refitted, and placed in reserve at Felixstowe. They were wooden-hulled, with three V12 petrol engines by Packard, Detroit, giving them a top speed of 40 knots. After coastal forces were axed, these remaining boats were sold in 1958. One earlier BPB boat, MGB *81* (ex-MTB *416*), which dates from 1942, has been restored to sea-going condition and survives at Portsmouth in the care of the Portsmouth Naval Base Property Trust. (© NMRN)

ABOVE • HMS *SCOTSMAN*
The rather bizarre appearance of *Scotsman* betrays her role as an experimental fast submarine. This S-class boat was given a streamlined casing and fin in Chatham Dockyard in 1947–48; the bridge atop a minimal fin was only protected by a canvas dodger. Her diesel engines, torpedo tubes and saddle tanks were removed, and an extra bank of batteries was introduced coupled with A-class electric motors and T-class propellers to give a submerged speed of 17 knots, which could be sustained for 40 minutes, or 14.5 knots for two hours. A smaller, U-class diesel engine was fitted for surface diesel-electric drive and charging. Her main roles were to give experience in operating a fast submarine, particularly investigating the problems of control, and to trial quieter designs of propeller. The size of the fin was soon increased and a higher continuous casing was built. In 1953–54 she was again modified, with a larger, taller fin to enclose a snort mast and give a higher bridge. (Author's collection)

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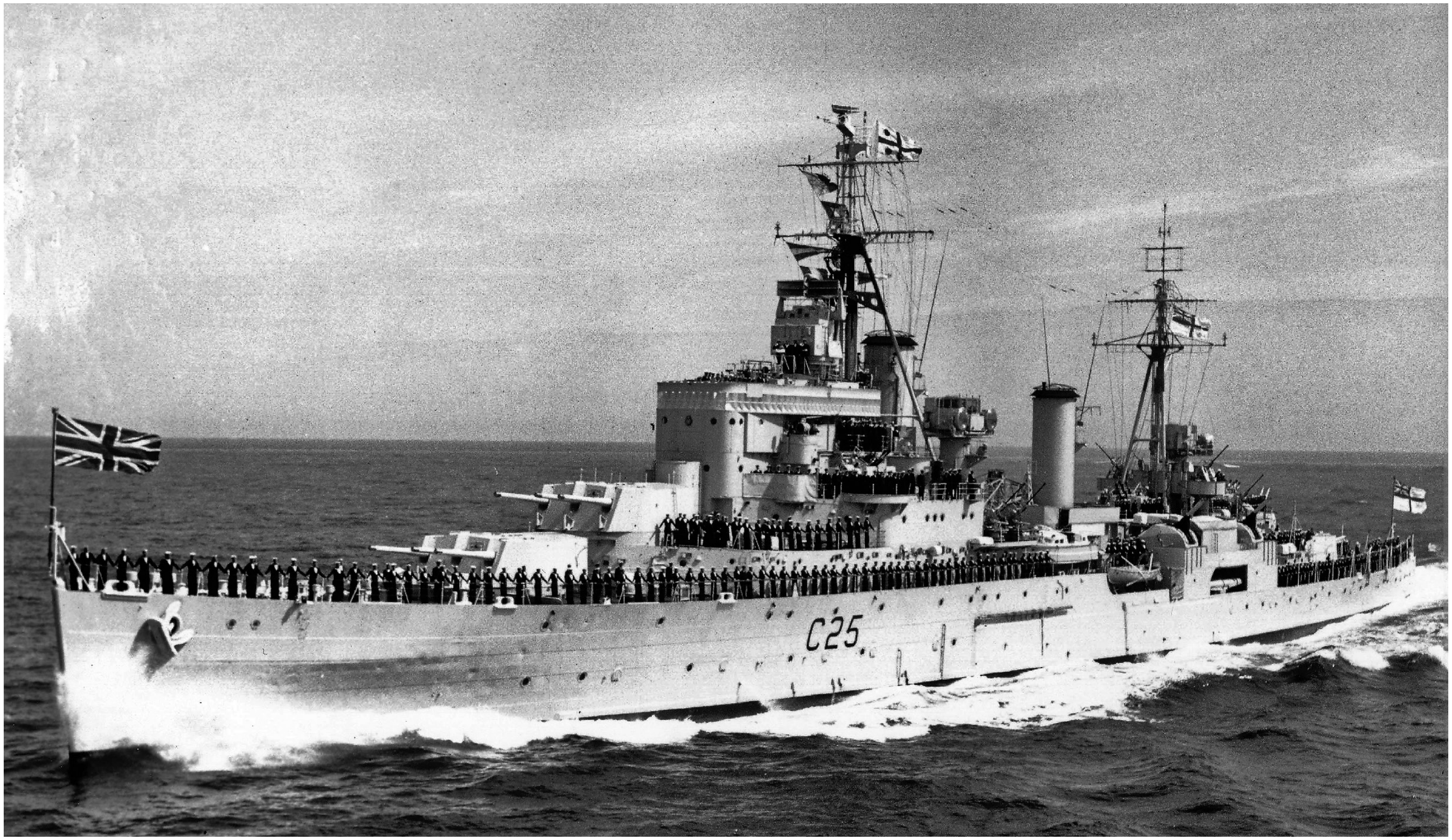


LEFT • HMS *VANGUARD*
The stately and well-proportioned lines of *Vanguard* are evident in this view of her in the Firth of Clyde in September 1952, when participating in Operation *Mainbrace*, the largest NATO exercise to date at that time. In the background is USS *Midway*. Completed in 1946, *Vanguard* was the last British battleship to be built and the last in service, as by 1951 the four King George V class were all in reserve. *Vanguard*'s design incorporated a marked sheer forward that gave her much better seakeeping qualities than earlier British battleships. She was flagship of the Mediterranean Fleet for a period, and then flagship of the Home Fleet Training Squadron, before becoming flagship of the Home Fleet and heading the lines at the 1953 Coronation Fleet Review. In 1954–55 she was refitted and placed in reserve, becoming flagship of the Flag Officer Reserve Fleet at Portsmouth from November 1956. In 1960 she was decommissioned and sold for breaking up at Faslane. (US Navy)

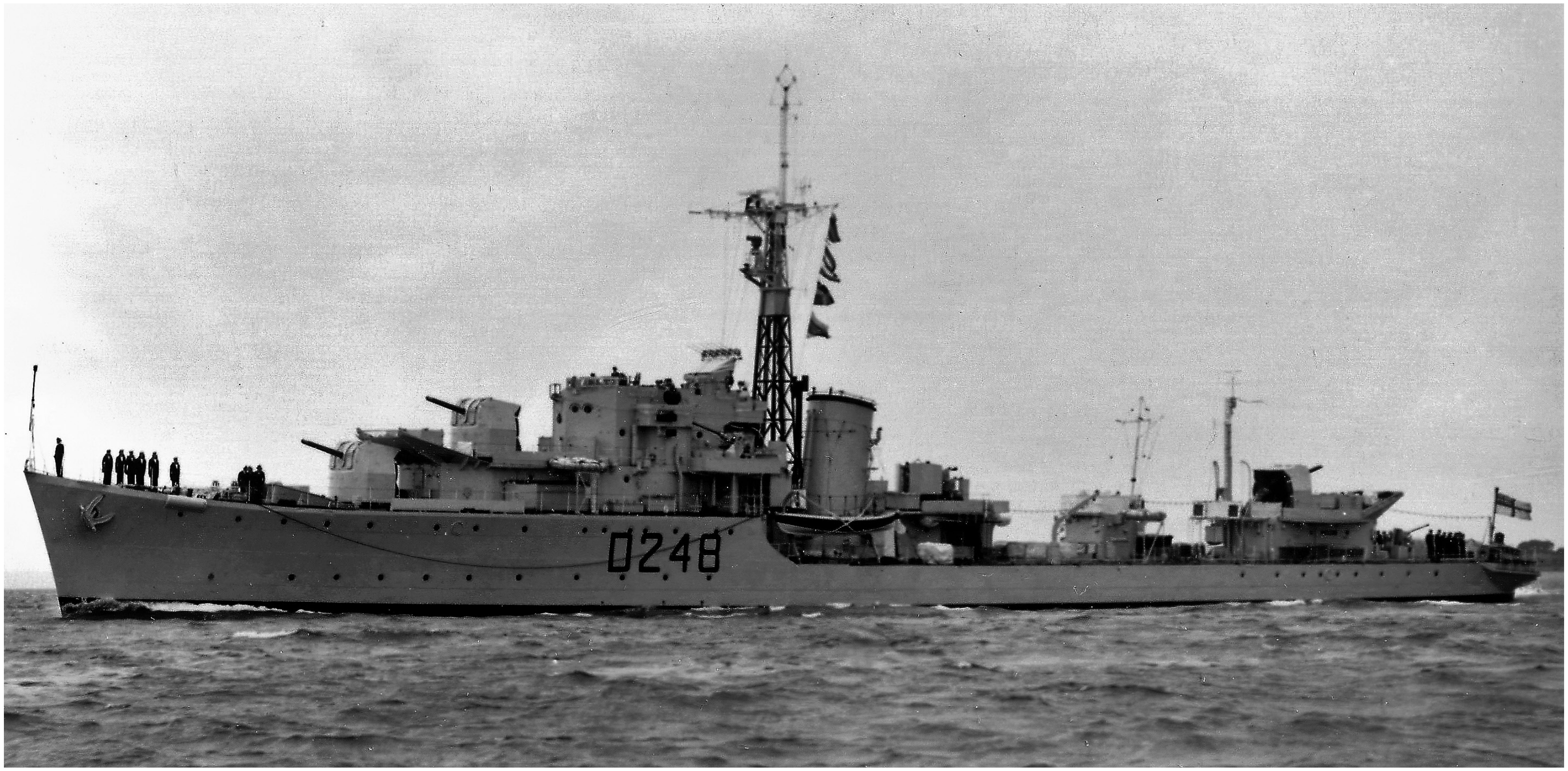
ABOVE • HMS *SUPERB*
Superb was a Minotaur-class cruiser, one of seven ordered in 1941–42, as modified versions of the Fiji class with an improved anti-aircraft armament. The aircraft hangar was eliminated, and the 'X' position 6-inch turret was replaced by anti-aircraft guns. *Superb* was completed by Swan Hunter, Wallsend, in November 1945. In November 1951 she transferred from the 2nd Cruiser Squadron to the Heavy Squadron, both in the Home Fleet. In December 1952 she joined the North America and West Indies station, and in October 1953, with the frigates *Burghead Bay* and *Bigbury Bay*, was sent to British Guiana to support a change in government, after embarking troops who had been flown out to Jamaica. She returned to the Heavy Squadron 12 months later, where she served until November 1954. From December 1954 until July1957 she completed a Home/East Indies general service commission. Placed in reserve, plans to modernise her were abandoned in the 1957 Defence Review, and she was sold for breaking up in 1960. (Royal Navy Image Archive)

ABOVE • HMS *EAGLE*

Launched at Belfast in March 1946, *Eagle* (ex-*Audacious*) was not completed until 31 October 1951, substantially to the original Audacious-class design, though with a more modern radar outfit. She joined the Home Fleet in March 1952, with Supermarine Attacker, Sea Hornet, Firefly and Skyraider aircraft embarked, and exercised with *Vanguard* and other units of the fleet off the north-east coast of Scotland in June. She is seen here in her original form in early 1953, when on the Home Fleet's spring cruise to Gibraltar. In September 1952 she had become flagship of the Heavy Squadron, and with *Indomitable* and *Theseus* of that squadron joined the lines of warships at Spithead for the Coronation Review of the Fleet in June 1953. *Eagle*'s first overseas service began in February 1954 when she was deployed to the Mediterranean for four months. She was in Malta in April for the arrival of the new royal yacht *Britannia*, joining a 25-knot steam-past by 15 ships of the Mediterranean Fleet. (Author's collection)

RIGHT • HMS *THESEUS*

Theseus was a Colossus-class aircraft carrier built by Fairfield, Govan, and completed on 9 February 1946. From October 1950 until April 1951 she was in action off Korea, with an air group comprising Sea Furies and Fireflies and a Sea Otter amphibian for search and rescue duties. Relieved by *Triumph*, she returned to the UK and spent nearly two years in the Home and Mediterranean fleets and is seen leaving Malta. She was then converted into a training ship and relieved *Implacable* as flagship of the Home Fleet Training Squadron in August 1954. In the 1956 Suez campaign she, like *Ocean*, was modified to serve as a helicopter carrier, and in Operation *Musketeer* their Whirlwind helicopters landed 415 Royal Marines of 45 Commando and 23 tons of stores at Port Said. She paid off at Portsmouth in December 1956 and was placed in reserve. The 1957 Defence Review included her in the list of ships to be disposed of and she was sold in 1961 for breaking up at Inverkeithing. (Royal Navy Image Archive)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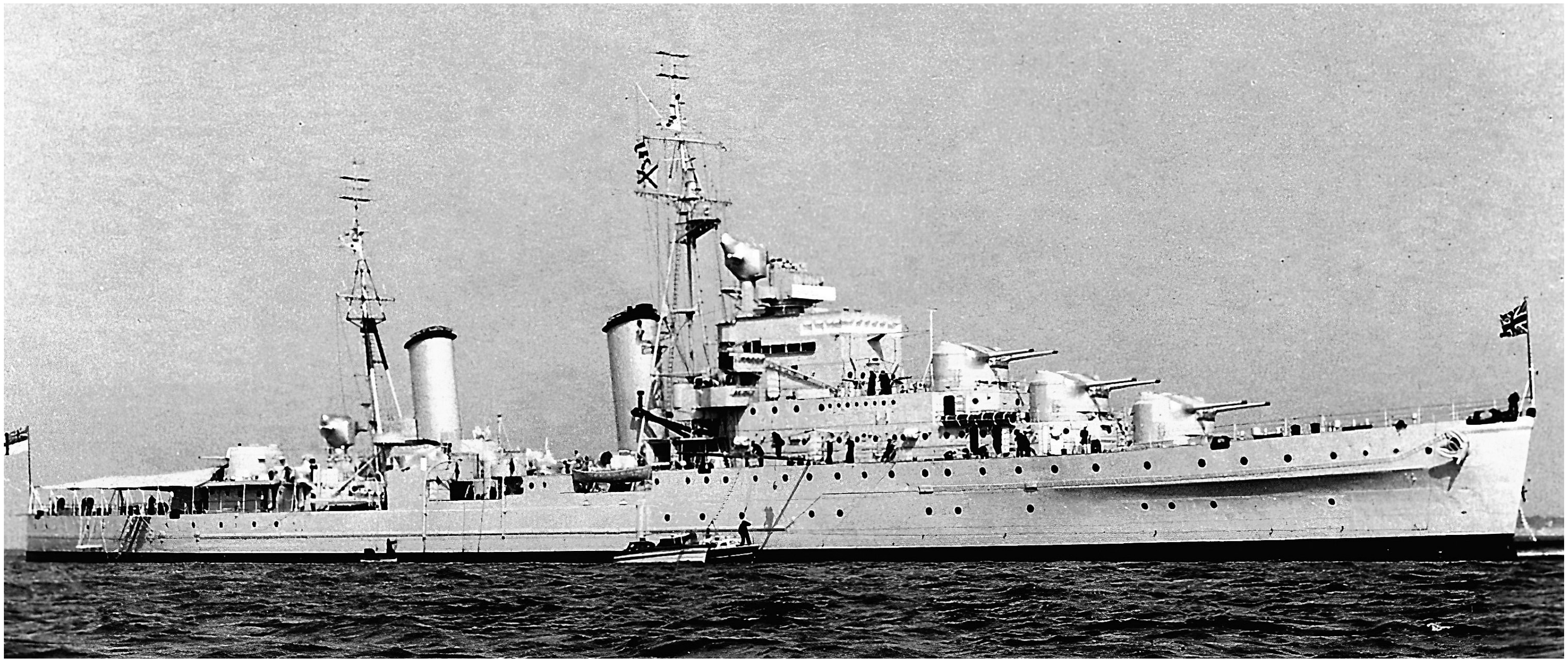
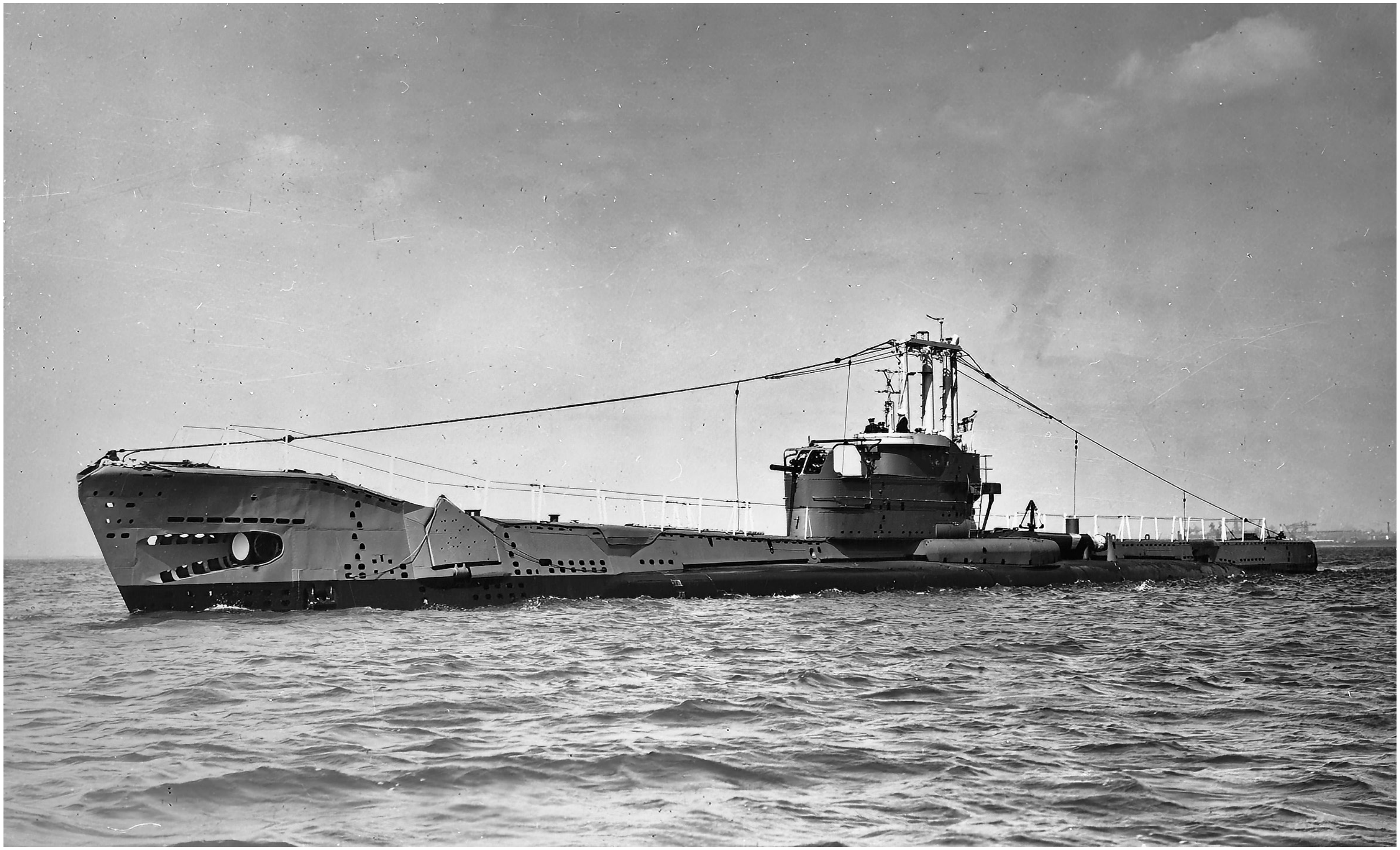


LEFT TOP • HMS *OBEDIENT*
Obedient was a destroyer of the O class, a derivative of the pre-war J class, though mounting four single 4.7-inch or 4-inch guns instead of six 4.7-inch in twin mountings. Four O class, including *Obedient*, were equipped as minelayers, with 4-inch guns and only one bank of torpedo tubes, and could carry 60 mines. Built by William Denny, Dumbarton, and completed in 1942, *Obedient* was brought forward from reserve in October 1952 to serve in the Portsmouth Local Flotilla. From May 1953 she was employed for air/sea rescue during aircraft carrier operations in the English Channel. She is seen in May 1953, shorn of her torpedo tubes. In December 1953 she was placed in reserve. (© NMRN)

LEFT BOTTOM • HMS *DIDO*
The Dido-class cruiser *Dido*, flagship of the Reserve Fleet, seen at the 1953 Coronation Review at Spithead, where she was accompanied by her sister ship *Cleopatra*. By this time the six survivors of the class in the Royal Navy were all in reserve. They had been designed in the mid-thirties to provide a smaller class of cruiser, with a main armament of five twin turrets of 5.25-inch dual-purpose guns. However, these guns were not ideal for anti-aircraft fire. *Dido* was built by Cammell Laird, Birkenhead, and completed in September 1940. From 1952 to 1956 she was flagship of the Reserve Fleet, before becoming a victim of the 1957 Defence Review, and was sold for breaking up in that year. (Author's collection)

ABOVE • HMS *ORCADIA*
The Algerine-class ocean minesweeper *Orcadia* in the lines of the 1953 Coronation Fleet Review. She was a representative of the Reserve Fleet, as evidenced by her cocooned guns, white pennant numbers and grey topmast. She was built by Port Arthur Shipbuilding Co, on Lake Superior in Canada, and completed in 1945, one of twenty Algerines to be built there. Larger than preceding minesweeper classes, they were equipped to deal with both acoustic and magnetic mines. In 1952 squadrons of Algerines were based at Harwich, Rosyth, Portsmouth, Malta and, in reserve, Singapore. Others of the class were in reserve in the UK and Malta. *Orcadia* was sold for breaking up in 1958.(Author's collection)



ABOVE • HMS *ANDREW*
Andrew was an A-class submarine completed by Vickers-Armstrongs, Barrow, in March 1948, with a snort mast, seen in the lowered position on the after deck in this pre-modernisation view of her. Her class was a development of the T class but with higher surface speed, radius of action and diving depth, radar that could operate at periscope depth, and an air-conditioning system, to meet the requirements of war in the Far East. The operational diving depth was 500ft, with a theoretical maximum of 840ft. After modernisation in Devonport Dockyard between October 1954 and March 1956, she served in the Far East from 1957 to 1968. In 1964, during the Indonesian confrontation, she was fitted with a 4-inch gun on the foredeck to counter infiltrating craft, and continued with it until she was paid off in 1974, the last Royal Navy submarine to carry a deck gun. The gun is now on display at the Royal Navy Submarine Museum, Gosport. (© IWM A 32584)

RIGHT • HMS *ANDREW*
In June 1953 *Andrew* made the first-ever submerged transatlantic crossing, from Bermuda to the English Channel. Here, on 16 June, her ship's company line the boat at Portland Naval Base. The crossing was timed to create a good news story in the month of the queen's coronation. Whilst sailing at periscope depth *Andrew*'s snort mast was used to draw fresh air into the boat, allowing her two diesel engines to be run. On the forward part of her conning tower is her 4-inch gun, partly obscured by sailors. Her captain, Lieutenant Commander W. D. S. Scott RN, is visible in the group of officers, and is identifiable by the two and a half rings on his sleeves. He said 'Our biggest danger was being run down. We had to dive to 80ft on two occasions to avoid passing ships. We had lots of really bad weather and once, when we were rolling badly, had to dive to 80ft for eight hours. I had the best crew I ever sailed with, everyone behaved magnificently.' (Conway Picture Library)

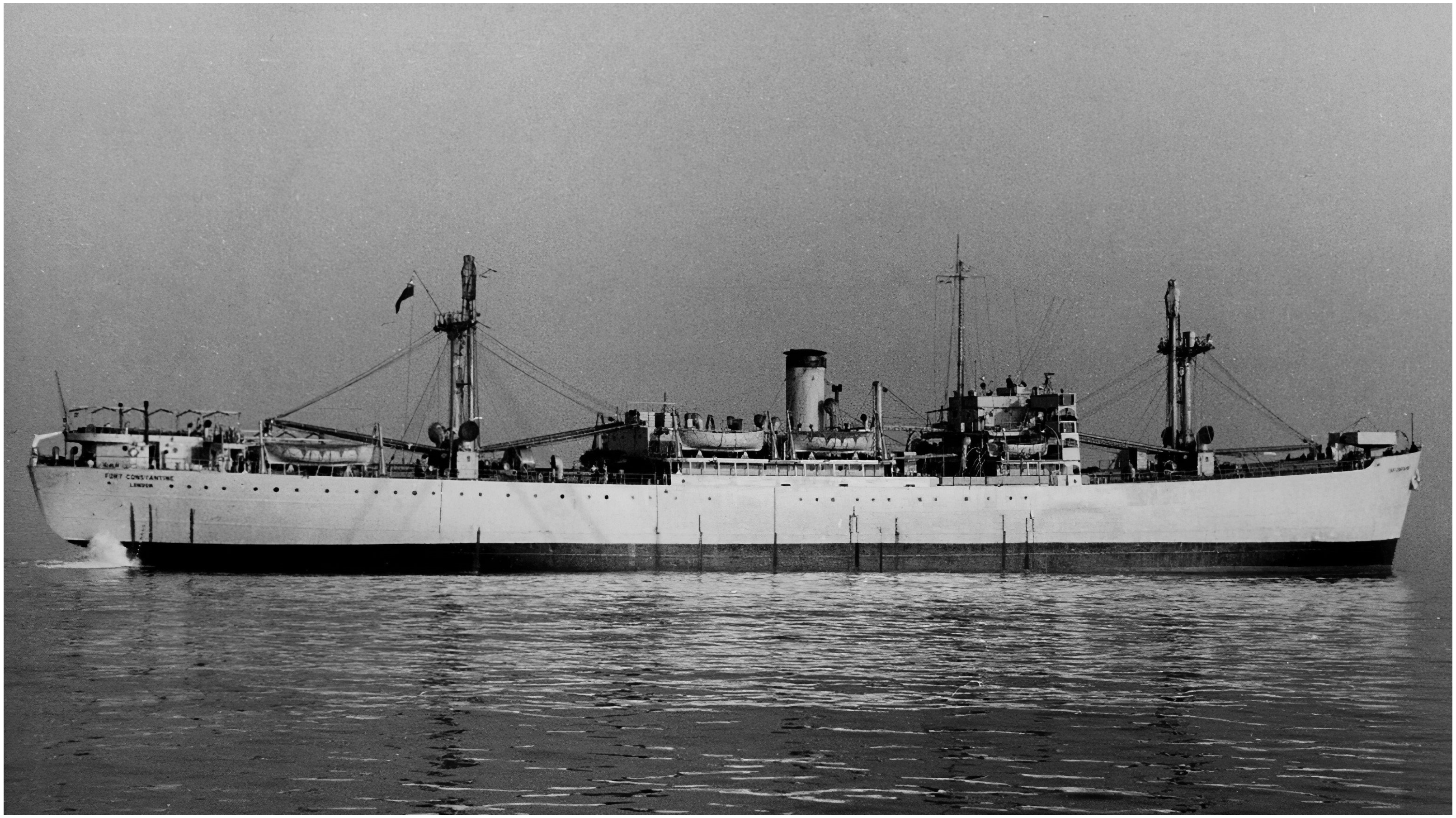
H.M.S/M. ANDREW

P5701

LEFT • HMS *BOLD PIONEER*
Bold Pioneer (pictured) and *Bold Pathfinder* were experimental Bold-class 'long' 122ft fast patrol boats built by J. Samuel White, Cowes, and Vosper, Portchester, respectively, and completed in 1953. They were the first British FPB class to be designed with gas turbine propulsion, two sets of which were supplemented by two diesel engines, and had four screws. They differed in some respects: *Bold Pathfinder* had a round bilge hull form (largely of light alloy construction) whilst *Bold Pioneer* had a hard chine hull form (largely wooden) and narrower, rounder funnels. In this view *Bold Pioneer* has a prototype 3.3-inch gun mounted forward, though normally both vessels were more heavily armed as gunboats. *Bold Pioneer* was sold in 1958, and became a houseboat at Newhaven, another victim of the coastal forces' cuts, whilst *Bold Pathfinder* stayed in service for a few more years in the Coastal Forces Trials and Training Squadron based at HMS *Dolphin*, Gosport (following the closure of HMS *Hornet*), and was sold in 1962.
(Conway Picture Library)

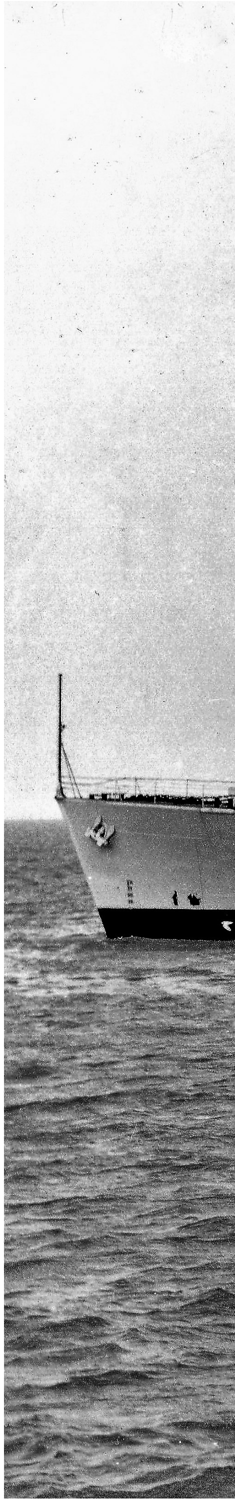
ABOVE • HMS *GAY BOMBARDIER*
Gay Bombardier was launched in August 1952 by Vosper, Portsmouth, as a double-diagonal mahogany-hulled, petrol-engined fast patrol boat of the Gay class. Her three Packard V12 engines gave her a top speed of 40 knots. The design of this 12-strong class was largely a repeat of Vosper's war-built 'short' motor torpedo boats, adopted as an interim measure until the Deltic diesel engines for the Dark class became available. The newly completed *Gay Bombardier* is pictured in 1953 on trials in the Solent and is equipped as a motor gunboat with a 4.5-inch gun forward and a twin 20mm gun aft. After the axing of coastal forces most of the class were sold, having had only short service lives, but three were retained as fast target-towing launches at Devonport. *Gay Bombardier* was placed in reserve at Hythe, on Southampton Water, and finally sold in 1963. *Gay Archer*, the lead boat of the class, survives in private ownership in a restored, sea-going state.
(Author's collection)

M2601



LEFT • HMS *INGLESHAM*
The Ham and Ley classes of inshore minesweepers, 101 of which were built between 1952 and 1960, were designed to operate in the shallow water of rivers, estuaries and inshore shipping channels, to counter the perceived threat of Soviet-laid mines. The first batch had wooden hulls on aluminium frames, but when the vessel rolled in the earth's magnetic field a current was generated in a loop formed by the aluminium frames and deck beams, producing a magnetic signature, so later vessels had wooden frames. Most were placed in reserve after completing acceptance trials, and few saw extended service. Seen here on builder's sea trials in 1953, *Inglesham* was the lead ship of the Ham class, and was built by J. Samuel White, Cowes, the parent firm for their construction. She served in the 50th Minesweeper Squadron based at Port Edgar until being placed in reserve in 1959. In 1966 *Inglesham* and many others of the class were sold, following a decision that they were unsuitable for the Navy's needs. (© IWM A 32546)

ABOVE • RFA *FORT CONSTANTINE*
RFA *Fort Constantine* was a victualling stores ship built to the standard wartime Victory-type merchant ship design by Burrard South Yard, Vancouver, and completed in 1944. She was ordered by the Ministry of War Transport to support the British Pacific Fleet and was managed by a commercial shipping company, with a merchant navy crew. She had refrigerated compartments in the 'tween deck, with the lower holds available for non-perishable cargoes. Her triple expansion steam engines gave her a speed of just 11 knots. In December 1949 she transferred to the RFA, and is photographed in 1953. She saw extensive service East of Suez, including supporting ships involved in the atomic bomb tests at Monte Bello Islands in October 1952 and the H-bomb test at Christmas Island in the Pacific, 1957–59. She was withdrawn from service and laid up in reserve at Devonport in December 1962, and in September 1969 was sold for breaking up in Hamburg. (Author's collection)



ABOVE • HMS *MAGPIE*

In July 1950 Lieutenant Commander The Prince Philip, Duke of Edinburgh, was given his first sea-going command, 11 years after joining the Royal Navy. From September 1950 until July 1951 he commanded the Black Swan-class frigate *Magpie*, in the 2nd Frigate Squadron based in Malta. The Black Swans were the final stage in the development of sloops in the thirties, but were too expensive and resource-hungry to be produced in quantity in World War II. Nevertheless, limited numbers were constructed and they proved to be very successful in hunting U-boats. *Magpie* was built by John I. Thornycroft, at Woolston, and commissioned on 30 August 1943. In the Battle of the Atlantic she contributed to the actions in which her unit, the 2nd Support Group, sank five U-boats. She was based in Malta from 1946 until October 1954, and was in the 7th Frigate Squadron on Home/South Atlantic service 1955–56. After a period in reserve, she was sold for breaking up in 1959. (Author's collection)

RIGHT • HMS *LOCH KILLISPORT*

Loch Killisport, seen at Sheerness in September 1954, was one of seven Loch-class frigates rearmed and given limited modernisation in the early fifties for service in the 9th Frigate Squadron in the Middle East. The Loch class was the final anti-submarine frigate design in World War II and early units such as *Loch Fada* met with success in sinking U-boats. The innovative design allowed them to be produced in numbers, and most ships had triple expansion steam engines rather than the expensive steam turbines of the Black Swan class. *Loch Killisport* was built by Harland & Wolff, Belfast, and completed in July 1945. She spent the early fifties in reserve, and after her modernisation (1953–54) served in the Middle East from 1955 until 1960 with some periods in home waters. From December 1960 to June 1965 she was part of the 3rd Frigate Squadron (later the 26th Escort Squadron) on Far East foreign service, based at Singapore. This frequently included Borneo patrols during the Indonesian confrontation. (Author's collection)

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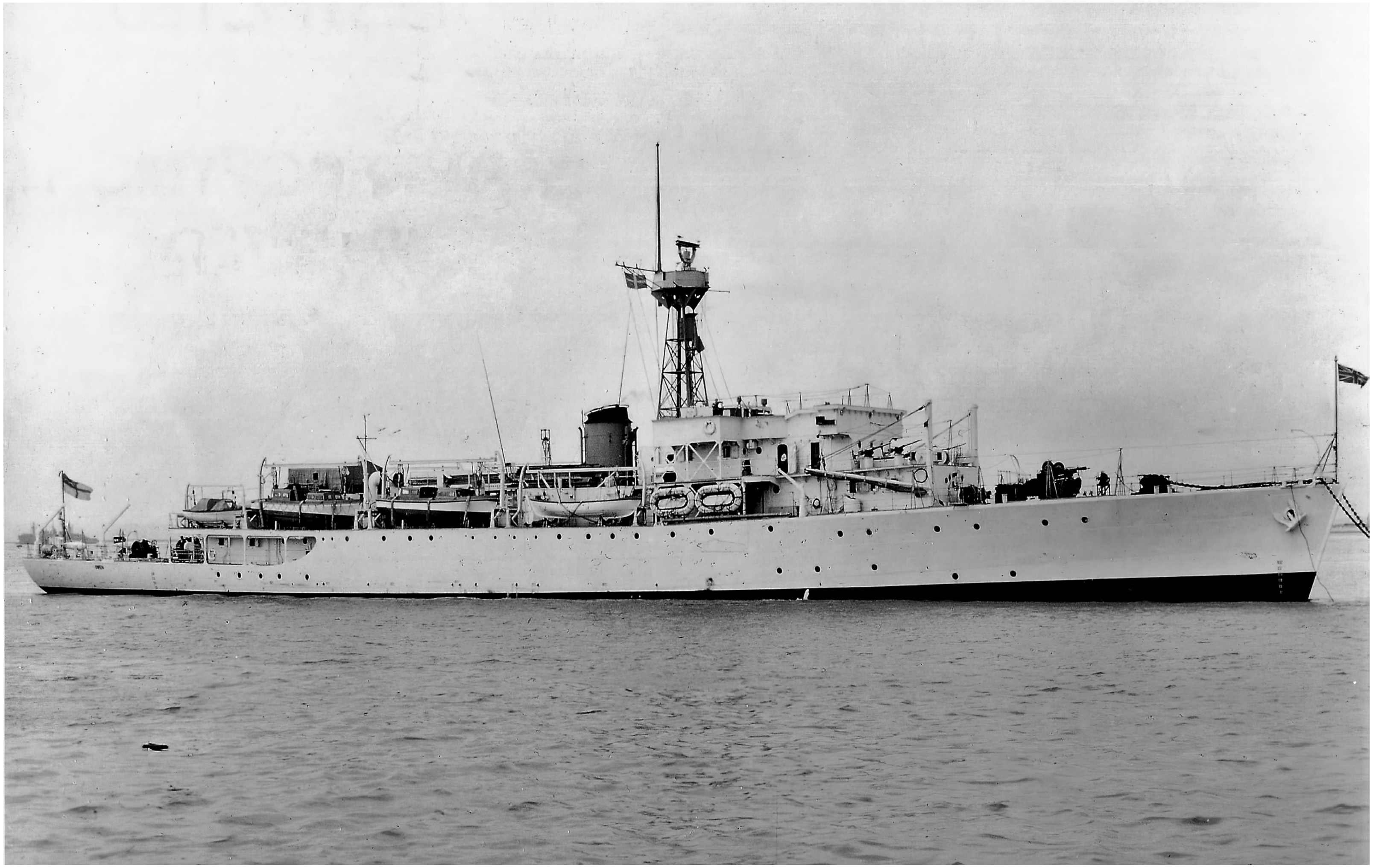
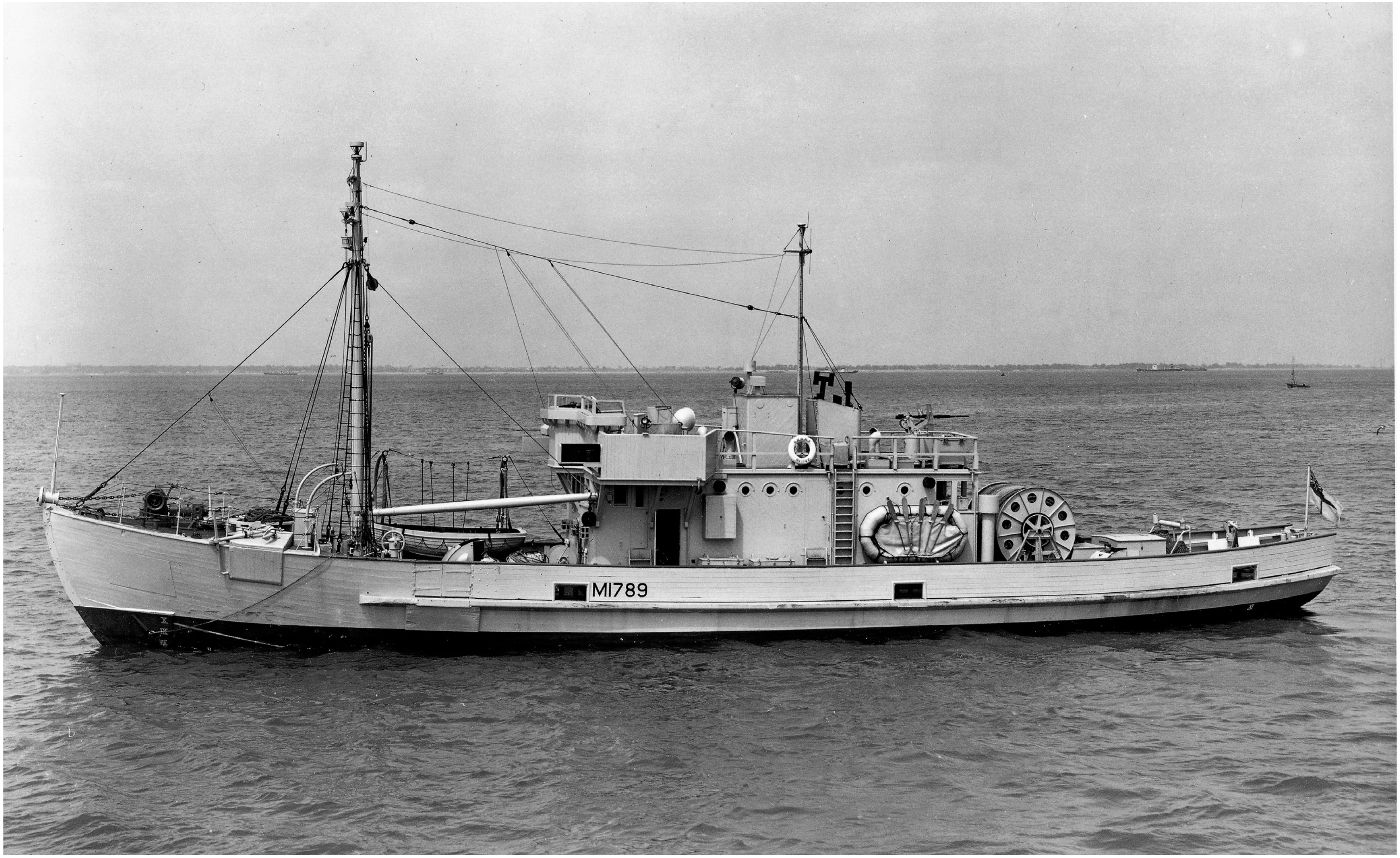


ABOVE • HMS *OWEN*
Owen was a survey ship which had been ordered in May 1943 as the Loch-class frigate *Loch Muick* from Hall Russell, Aberdeen, but was subsequently reclassified and launched as the Bay-class frigate *Thurso Bay* in October 1945. She was, however, completed by Chatham Dockyard as the survey ship *Owen* in September 1948, being named after the explorer and naval officer William Fitzwilliam Owen. He is best known for his exploration of the west and east African coasts and Sumatra, and for surveying the Canadian Great Lakes. *Owen*'s triple expansion steam engines were also manufactured by Hall Russell. She is seen at Sheerness in September 1954, prior to deploying to Bahrain for survey work in the Persian Gulf. During her 17-year career she also operated in the South Atlantic, Mediterranean, Indian Ocean and home waters. On 29 September 1965 she arrived at Devonport to pay off for disposal. (Author's collection)



ABOVE • HM MMS *1789*
Motor minesweepers (MMS) were built in large numbers during World War II to deal with magnetic mines in coastal waters, using a 750ft-long sweep stored on a reel aft and streamed from the stern. They also had an acoustic hammer forward to deal with acoustic mines, and some were equipped with wire sweeps. Their hulls and superstructures were wooden to minimise their magnetic signature, and they had diesel engines from a variety of manufacturers. Their construction closely followed fishing vessel practice to suit the yards which built many of them. After the war they were kept busy clearing wartime mines. MMS *1789* is seen in June 1954 after a refit in Sheerness Dockyard, following three years' service with the RNVR London Division under the name *Thames*. She was built as MMS *289* by John Morris & Co, Gosport, with engines by Crossley Brothers Ltd, Redditch, and completed in November 1943. MMS were replaced by Ton-class minesweepers: MMS *1789* was sold in 1959, one of the last to go. (Author's collection)

M1101
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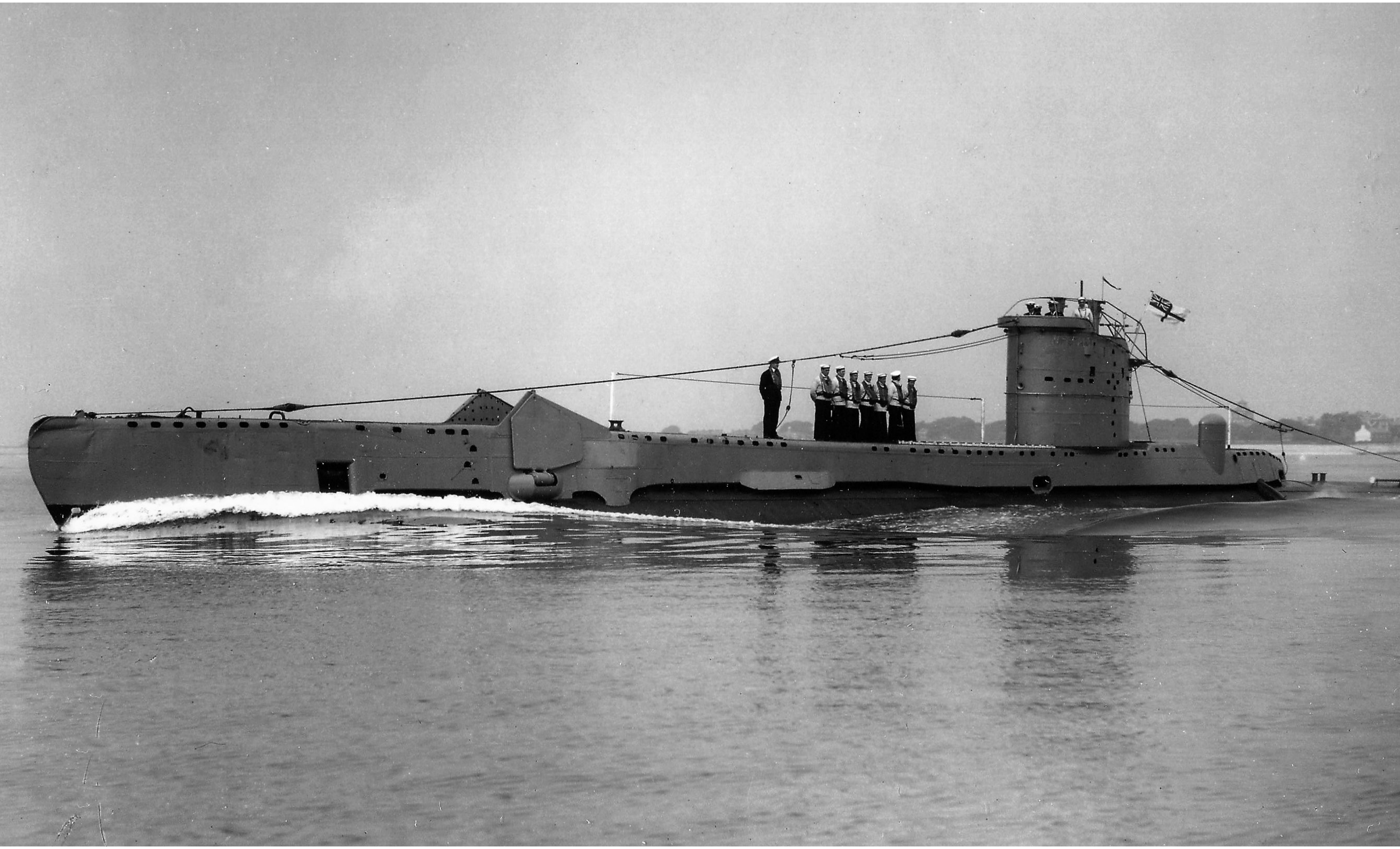
LEFT • HMS *CONISTON*
Coniston was the lead ship of the Ton-class coastal minesweepers, and was built by John I. Thornycroft, Southampton, which was also the parent firm for the many smaller yards which built others of the class. The hull was constructed of double mahogany planking on aluminium alloy frames, with an aluminium alloy superstructure and non-magnetic fittings. Between 1952 and 1960, 116 were built for the Royal Navy, making them the most numerous class of postwar British warships, and a later, additional vessel, *Wilton*, had a GRP hull. They were designed to counter the threat of Soviet-laid mines in shallow coastal waters and could deal with magnetic, acoustic and contact mines. Many were placed in reserve after completing acceptance trials. Although nominally the first of class, *Bildeston* had been completed three weeks earlier; *Coniston* was completed in May 1953, and is seen here at Sheerness in November 1954 whilst a member of the 104th Minesweeper Squadron based at Harwich. She was placed in reserve in 1960 and sold for breaking up in 1970. (Author's collection)

ABOVE • HMS *SCORCHER*
Scorcher berths alongside the depot ship *Maidstone* at Portland, 20 May 1954, after being posted missing for more than an hour during an exercise off Portland Bill. Asdic operators in the frigates *Tyrian* and *Flint Castle* lost contact with her: the signal 'Sub Smash 1' was immediately flashed to all ships and naval stations and a search began. Her commander was unaware that contact had been lost and later surfaced to see a host of ships approaching. He signalled, 'Why?'. From a neighbouring submarine he received a 'cryptic reply in characteristic naval fashion.' The S class, a medium-sized boat for confined waters, was the largest group of RN submarines ever built. They had an operational diving depth of 350ft, including a large safety margin. The theoretical maximum depth was 700ft, and *Supreme* achieved a depth of 647ft. *Scorcher* was armed with seven 21-inch torpedo tubes, but the 3-inch gun originally fitted has been removed. A snort mast has been added, shown lowered on deck abaft the fin. (Conway Picture Library)

ABOVE • HMS *GAY ARCHER*
The fast patrol boat Gay Archer, during a rehearsal for NATO Exercise Haul, in the Channel, July 1954. She was one of more than fifty RN ships which would take part. British and Norwegian FPBs and US motor launches would represent enemy E-boats in the exercise, in which convoys would be defended by escort vessels and maritime aircraft against submarine and E-boat attack. Flying the Jolly Roger, she has a twin 20mm gun forward and is equipped as a minelayer. Completed in May 1953 by Vosper, her first deployment, to the Baltic, was marred by damage caused by a fire aboard FPB *1023* when alongside in Aarhus. Following the axing of coastal forces, she was laid up at HMS Diligence, Hythe, in 1957, and sold in 1963. After use as a houseboat, she was restored to her original appearance, mounting two 21-inch torpedo tubes, a 20mm Oerlikon gun aft and a 40mm Bofors gun forward, in seagoing condition, with twin diesels replacing her petrol engines. (Author's collection)

ABOVE • HMS *DARK AGGRESSOR*

Dark Aggressor was the lead boat of 18 Dark class, the first operational class of fast patrol boats in the Royal Navy to be diesel powered. Although noisy, the two 18-cylinder Napier Deltic diesels gave them a top speed of 47 knots, a longer range, and a much-reduced fire hazard when compared to the earlier petrol-engined craft. *Dark Aggressor*, built by Saunders-Roe, Anglesey, was completed in 1955, and is seen on the measured mile in the Solent as she undertakes first-of-class speed trials. She was of composite construction, having alloy frames with a wooden skin and decks, and is equipped as a torpedo boat but could also be fitted as a gunboat. Her hull is painted grey, but soon all the class were to have black hulls to hide the exhaust stains on their sides. They had short operational lives because of the decision to axe coastal forces in 1956. *Dark Aggresso*r was reduced to low category reserve at Portsmouth, and sold in 1961. (© NMRN)

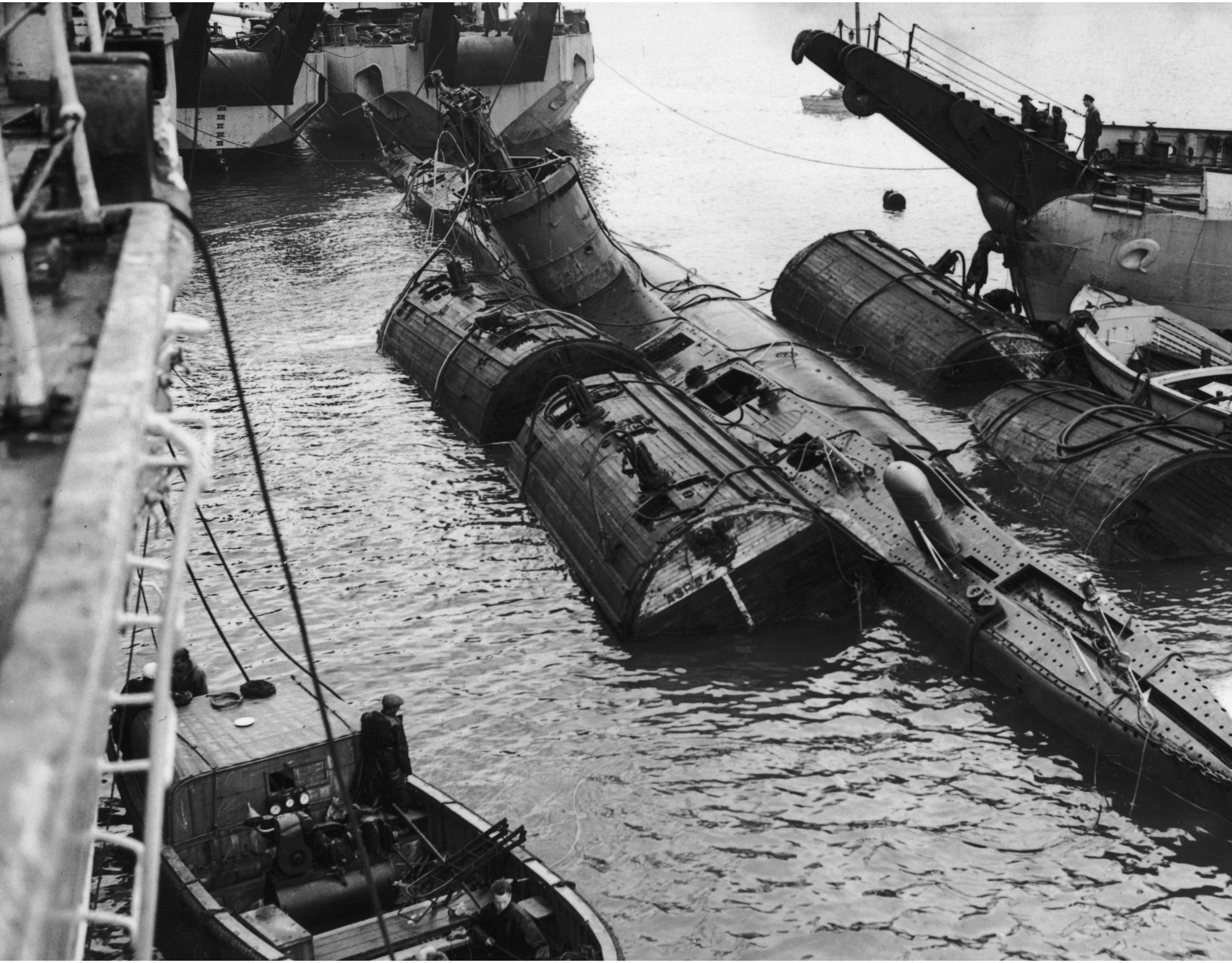


ABOVE • HMS *UPSTART*

Upstart was a U-class submarine built by Vickers-Armstrongs, Barrow, which entered service in April 1943. In her war operations off the south coast of France she sank two French fishing vessels, the German auxiliary minelayer *Niedersachsen*, and the German merchant ship *Tolentino*. From 1945 to 1952 she was loaned to the Greek Navy as *Xifias*. On their return from Greece, due to a shortage of submarines she and her sister boat *Untiring* were refitted for Royal Navy service, which was surprising since the other U-class boats had already been scrapped or sold to foreign navies. They were quite small, having been designed for service in Mediterranean and coastal home waters, and were unsuitable for Cold War operations. Seen here leaving Portsmouth harbour, in June 1954, she was based at Portland in the 2nd Submarine Squadron and was used for anti-submarine training, *Upstart* was eventually sunk in July 1957 as a sonar target south of the Needles, where her wreck still lies. (© NMRN)

ABOVE • HM FPB *5002*

FPB *5002* was a 'long' fast patrol boat of the Fairmile D class and is seen here in company with others of her class in the early fifties. She was ordered from the Wallesey Bay Yacht Co in March 1943, and completed in December 1944. Much larger than the 70ft 'short' MTBs, the formidably armed 115ft Fairmile Ds were designed to be a match for German E-boats. Powered by four Packard V12 petrol engines (manufactured in Detroit) they had a top speed of about 28 knots. They were designed to be assembled by yacht building yards from prefabricated wooden components made by subcontractors, mainly furniture makers, and supplied as kits by the Fairmile Company. Widely spaced transverse frames were cut from plywood sheets and slotted to receive the longitudinals. Of the class 228 boats were built, but only 20 survived to see service in the fifties. FPB *5002* was sold in 1957 after the demise of coastal forces. (Royal Navy Image Archive)

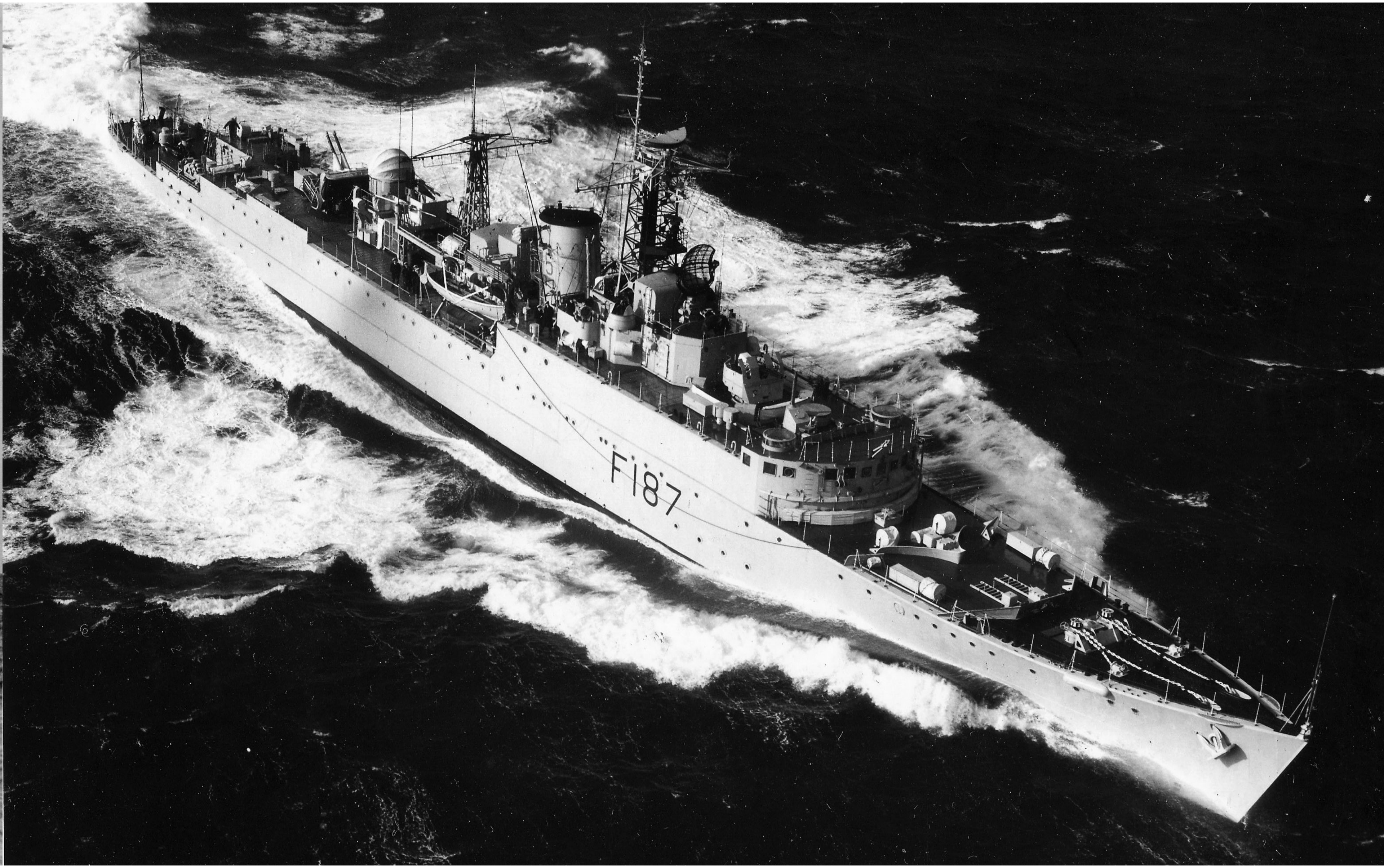


LEFT • HMS *SIDON*
The S-class submarine *Sidon* is raised, for the second time, using large buoyancy tanks, in Portland harbour on 24 June 1955. A boom defence vessel and two coastal salvage vessels are conducting the operation. She had sunk on 16 June, with the loss of 13 lives, after an experimental hydrogen peroxide-fuelled torpedo exploded and ruptured her hull. Once raised, the submarine was towed away and beached on Chesil Bank. She was not fully repaired, but instead was paid off, and later sunk as a target on 14 June 1957. She had been built by Cammell Laird, Birkenhead, and commissioned on 23 November 1944. *Sidon* was named after the bombardment and capture of the port of Sidon, Lebanon, by British and Ottoman ships in September 1840. By the time of the accident she was one of five S-class submarines used in anti-submarine training at Portland, as part of the 2nd Submarine Squadron. (Photo by Keystone/Hulton Archive/Getty Images)

ABOVE • HMS *CENTAUR*
The light fleet aircraft carrier concept of the Colossus class evolved into the much more capable Centaur class, able to embark the first generation of jet fighters, and with the speed to keep up with task groups in the fleet. *Centaur* was first commissioned in September 1953 but was in dockyard hands from October 1953 to May 1954 having her flight deck angled. She deployed to the Mediterranean in September 1954, with Sea Hawk, Sea Fury and Avenger squadrons embarked, and is seen on 27 April 1955 with 12 Sea Fury, six Avengers and a Dragonfly helicopter on her flight deck, and her sister ship *Albion* astern. In January 1956 Gannets and more Sea Hawk aircraft were embarked, replacing the Avengers and Sea Furies, and *Centaur* sailed for the Far East. On her return in May she entered Devonport Dockyard for steam catapults to be fitted. In September 1958 she embarked Sea Hawk, Sea Venom and Gannet aircraft, and in May 1959 deployed East of Suez. (Royal Navy Image Archive)

ABOVE • HMS *LEEDS CASTLE*

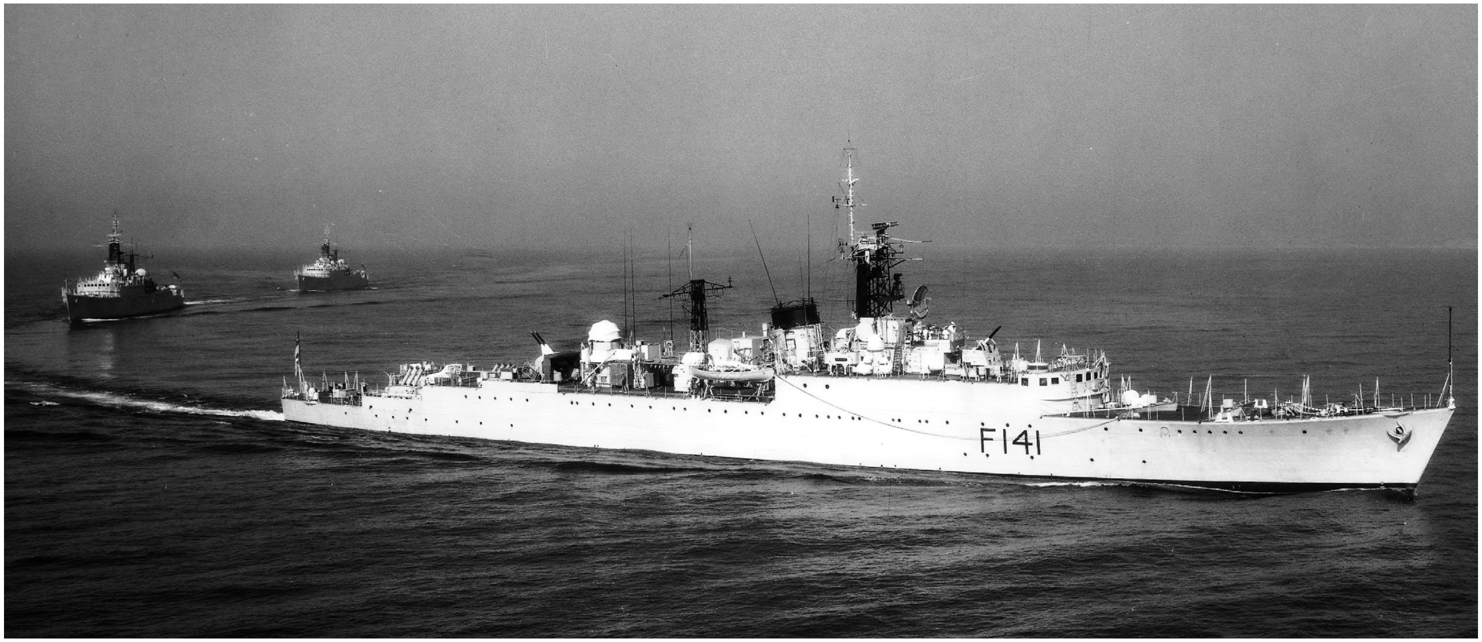
Leeds Castle, seen in May 1955, was a Castle-class frigate which had been completed by William Pickersgill, Sunderland, in February 1944. The Castles had been introduced in 1943 to supersede the Flower-class corvettes as convoy escorts, and were built by yards that were unable to build the larger Loch class. They had only one triple expansion steam engine, rather than the two in Lochs, giving them a slower speed of 16 knots compared to the 20 knots of the Lochs. Like the Lochs they mounted the new Squid anti-submarine mortar but had only one, whilst the Lochs had two. Most of the class were in reserve in the fifties with just five serving in Portland's 2nd Frigate Squadron for anti-submarine training, until 1956–57 when they were replaced by new Blackwood-class frigates. *Leeds Castle* was paid off at Chatham in November 1956 and sold for breaking up in 1958. (© NMRN).



ABOVE • HMS *WHIRLWIND*
In the late forties the Soviet Union Navy set about building large numbers of fast submarines, such as the Whiskey class. The Royal Navy recognised the need for faster escorts to counter the threat, but due to budget restrictions no new escorts would be laid down until 1952. The solution was to convert many of the surviving war-built fleet destroyers into fast anti-submarine frigates. Of the conversions, 23 were to the Type 15 (full conversion), which had a strong anti-submarine capability, a low silhouette to limit the effect of nuclear blast, good anti-submarine and gun armament, and excellent action information organisation facilities. *Whirlwind*, seen here in December 1955, was converted between May 1951 and July 1953 by Palmers, Hebburn. She saw Home/Mediterranean service in the 5th Frigate Squadron from 1953 to 1959 and, after a refit, Home/West Indies service in the 8th Frigate Squadron from May 1961. She arrived at Portsmouth on 18 February 1966 to pay off into low category reserve. (Author's collection)

LEFT • HMS *ALBION*
Albion was commissioned in May 1954 and embarked Sea Venom, Sea Hawk, Wyvern, Avenger and Skyraider aircraft before joining the Mediterranean Fleet in September. In January 1956 she sailed for the Far East, and returned to Portsmouth in May. She is shown with Sea Hawks (right), Sea Venoms and a Whirlwind helicopter on the flight deck. A refit was curtailed due to the Suez crisis: in November 1956 she launched air strikes against Egyptian airfields and provided cover for paratrooper assaults. Her helicopters flew in supplies to British troops and evacuated the wounded. In November 1957 she entered Portsmouth Dockyard for a refit, and was in July 1958 hastily deployed to Malta, carrying commandos and troops plus 500 vehicles, to increase the British presence in the eastern Mediterranean following a revolution in Iraq. Afterwards her air group re-embarked and she joined the Far East Fleet. *Albion*'s last commission as a fixed-wing aircraft carrier began in December 1959 and took her to the Far East again.
(Royal Navy Image Archive)

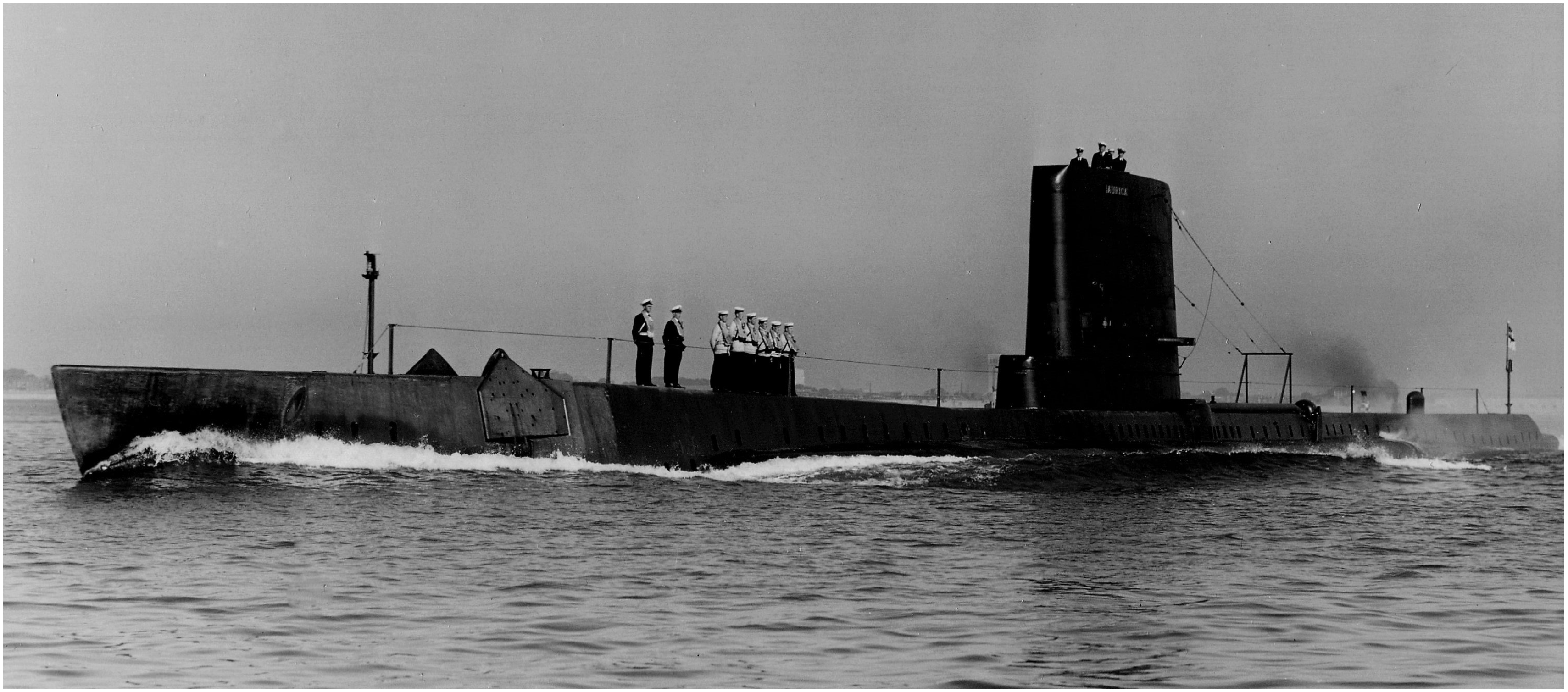
ABOVE • HMS *EAGLE* and Sea Venom
A flak-damaged Sea Venom of 893 Naval Air Squadron (NAS) after landing on HMS *Eagle* with no undercarriage, November 1956. As the aircraft skidded along the flight deck its tailhook engaged with an arrestor wire, bringing it to a halt. Members of the flight deck crew rush to help the pilot after his frightening ordeal. The plane had sortied in Operation *Musketeer*, the invasion of Suez. The naval strike force was led by the carriers *Eagle, Albion* and *Bulwark*, flying Sea Venoms and Sea Hawks, armed with rockets and cannon, which attacked troop concentrations, oil fields, aircraft and vehicles. Between 1 and 6 November *Eagle* launched 621 sorties. The Sea Venom, a naval version of the RAF's Venom, with folding wings, a strengthened undercarriage, and an arrestor hook, was first trialled in 1951, and was phased out from 1959 onwards, with Sea Vixen as its replacement. In all, 256 Sea Venoms were built for the Royal Navy. (© IWM A 33609)



ABOVE • HMS *UNDINE*
Undine, seen in 1957 as leader of the 6th Frigate Squadron in the Mediterranean, executing a sharp turn for the photographer, with two other Type 15s astern. *Undine* and six other British Type 15s were part of Operation *Musketeer*, the Anglo-French plan to retake the Suez Canal in 1956. Her armament included two Limbo anti-submarine mortars supported by Type 170 and 174 sonar sets, one twin Mk 19 4-inch gun and one twin 40mm Bofors Mk 5 gun. She was originally ordered as a U-class destroyer from John I. Thornycroft, Woolston, and completed on 23 December1943. Her conversion to a Type 15 frigate was undertaken by Alexander Stephen, Linthouse, 1952–53, and after a year in reserve she served in the 6th Frigate Squadron on Home/Mediterranean service from 1954 to 1960. After recommissioning in April 1960 defects became apparent and she was paid off, with her crew transferred to *Rocket*, ex-reserve. She was named *Undine* after a water nymph in Greek mythology. (Royal Navy Image Archive)

RIGHT TOP • HMS *AURIGA*
This 1956 view of the A-class submarine *Auriga* shows her after modernisation at Chatham, December 1954 to December 1956. Her appearance can be contrasted with that of *Andrew*. She was built by Vickers-Armstrongs, Barrow, and completed in 1946. Like the others of her class, she was too late to see war service. They were the first all-welded British submarines, and when modernised the casing was streamlined, the fin/conning tower was fully enclosed, and the gun and external torpedo tubes (where still fitted) were removed. This made them quieter when submerged and gave a small improvement to underwater speed, but unlike the eight fully modernised T-class boats they were not given additional power. On 12 February 1970 *Auriga* suffered a battery explosion while operating in the Gibraltar area on NATO exercises. The boat was able to reach port safely, but ten men were injured. The origin of her name was the mythological Roman charioteer Auriga, after whom a constellation was also named. (Author's collection)

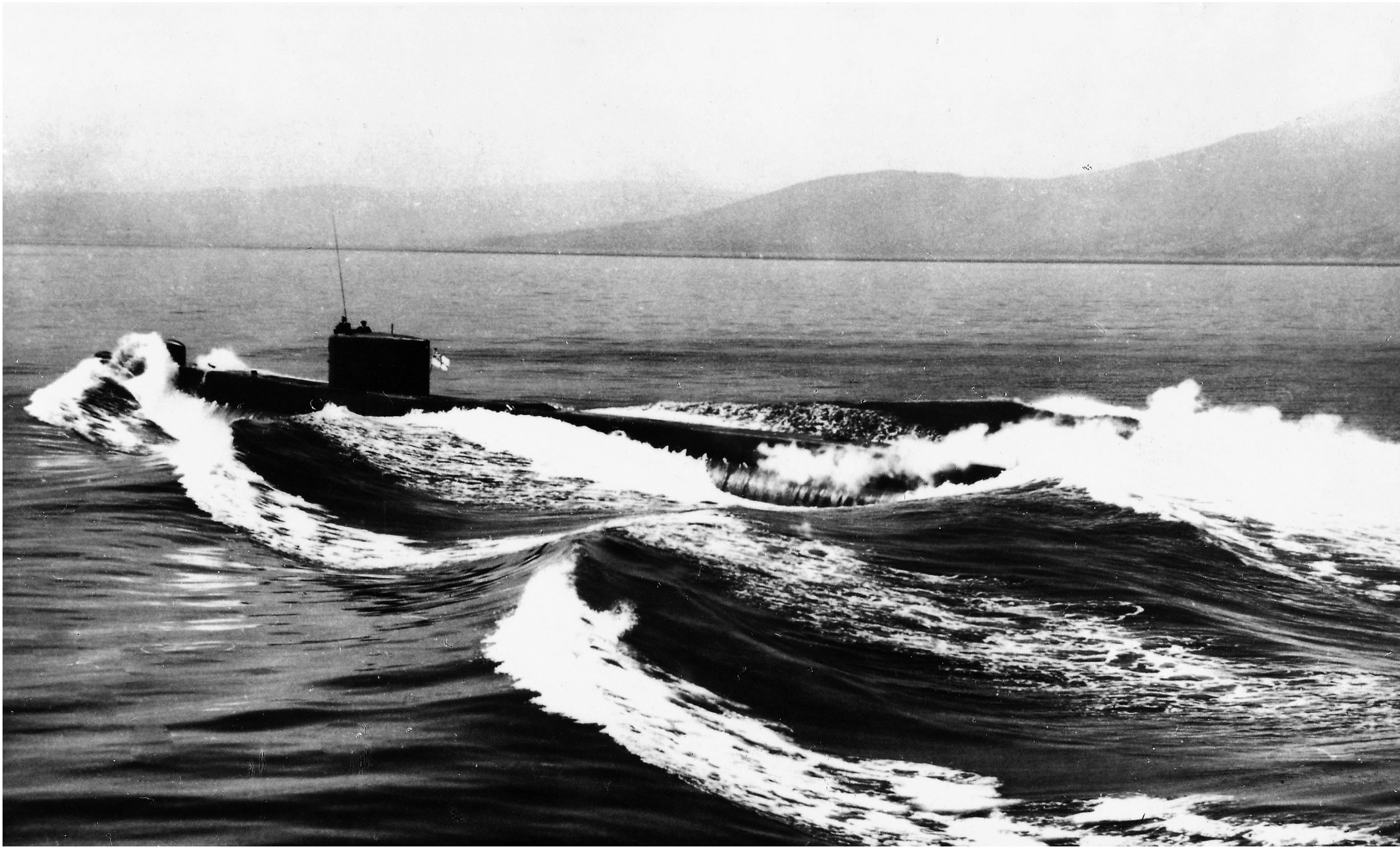
RIGHT BOTTOM • HMS *SHRIMP*
Shrimp, one of four midget submarines built in 1954 by Vickers-Armstrongs, Barrow, is seen leaving Portsmouth harbour in October 1956. Only 53ft in length, with a crew of five, they were intended to conduct the highly secret Operation *Cudgel*, a plan to lay nuclear charges (of types named Blue Danube and Red Beard) in the approaches to the Soviet Union's Kronstadt naval base, in the eastern Baltic near Leningrad, apparently in response to a similar development with which the Soviets were experimenting. The idea for the nuclear mine fizzled out and the boats were laid up. *Sprat* was loaned to the US Navy in 1958, and was scrapped in 1966 along with *Minnow*. *Shrimp* was scrapped at Rosyth Dockyard in 1965. The lead boat, *Stickleback*, was sold to Sweden in 1958 and survives, on display at the Scottish Submarine Centre, Helensburgh. The design of these boats was derived from the successful X-craft of World War II, one of which, *X24*, survives in the RN Submarine Museum, Gosport. (© NMRN)



SHRIMP

ABOVE • HMS *VERYAN BAY*

Veryan Bay was one of five Bay-class frigates alternating in service between the North America and West Indies station and home waters, 1952–56. Another five Bays were serving in the 4th Frigate Squadron in the Far East. Whilst on the North America and West Indies station, *Veryan Bay* was detached to the South Atlantic three times to patrol in the Falklands, South Georgia and South Shetland Islands regions. In November 1956 she transferred to the South Atlantic station until March 1957, when she finally paid off at Devonport. Her class was a derivative of the Loch class, conceived when the Battle of the Atlantic was all but won and there was a need for anti-aircraft escorts in the Indo-Pacific region. The revised design included a strong anti-aircraft armament at the expense of the anti-submarine capability, and 26 Loch-class frigates already on order were reclassified as Bays. *Veryan Bay* was built by Charles Hill, Bristol, and completed in May 1945. (Author's collection)



ABOVE • HMS *EXPLORER*

Explorer, pictured at speed in 1957, was an experimental submarine designed to evaluate high-test hydrogen peroxide (HTP) as a fuel for her turbines, using the German Walter system. First trialled by the Royal Navy in the late forties in the former U-boat HMS *Meteorite*, it was seen as an alternative to nuclear propulsion for high underwater speeds. Entering service in 1956, *Explorer* achieved a speed of 27 knots submerged, but by then the nuclear-powered submarine was the favoured option and she and her sister boat *Excalibur* were mainly used as high-speed targets in anti-submarine warfare training. They were unpopular with crews because of the dangerous, highly volatile nature of HTP, and *Explorer* was nicknamed 'Exploder'. One Royal Navy submariner commented 'I think the best thing we can do with peroxide is to try to get it adopted by potential enemies.' The two boats were withdrawn in the early sixties. (Author's collection)

F34

LEFT • HMS *PUMA*
The Leopard-class anti-aircraft frigate *Puma* and her three sister ships were members of the 7th Frigate Squadron on Home/South Atlantic service until 1967 when the South Atlantic station was disbanded. They were diesel powered, reportedly because no suitable steam turbine design was available, and shared the same hull and machinery as the Salisbury class. Their top speed of 25 knots was at least five knots slower than the contemporary Whitby-class anti-submarine frigates, which were steam turbine driven, and they only had one Squid mortar as anti-submarine armament. Two twin 4.5-inch guns provided their main armament, supplemented by a twin 40mm Bofors gun. *Puma* was built by Scott's, Greenock, and completed in April 1957. Her diesel engines were manufactured by Chatham Dockyard and British Polar, Glasgow. She was modernised in Portsmouth Dockyard in 1963–64 and served until 1972. She was sold for breaking up in 1976.
(Royal Navy Image Archive)

ABOVE • HMS *SALISBURY*
Salisbury was the lead ship of the Salisbury-class aircraft direction frigates. Completed in February 1957, she had been built by Devonport Dockyard, and her eight Admiralty-designed diesel engines were manufactured by Vickers-Armstrongs, Barrow. The class was designed for air-search, and fighter aircraft direction to aerial targets, and for these purposes the ships carried the Type 960 long-range radar which, in this 1959 view, can be seen atop the deckhouse between the main mast and the twin 40mm Bofors gun. They shared their hull and machinery design with the Leopard class and had a range of 5,000 miles at 15 knots. From 1957 to 1961 *Salisbury* saw service with the 5th Frigate Squadron in Home, Mediterranean and East of Suez waters before being modernised in Devonport Dockyard, 1961–62. She then served in Home and East of Suez waters until 1978, when her proposed sale to Egypt fell through, and was finally sunk as a target in 1985.
(Author's collection)

ABOVE • HMS *BLACKWOOD*
Blackwood, seen just after completion by John I. Thornycroft, Woolston, in August 1957, was the name ship of the Blackwood-class, or Type 14, frigates, 12 of which were built. The first of the class, *Hardy*, had been completed in December 1955. The onset of the Korean War, and the belief that it might escalate into World War III, led to the decision to order an anti-submarine frigate which cost less than the Whitby class. In the event of war, it was envisaged that large numbers of Blackwoods could be built quickly. They only had one set of steam turbines, of the same type as the two fitted in the Whitbys, and this gave them a slower speed of 24 knots. They did, however, mount two Limbo mortars, like the Whitbys, and were intended to carry the new Bidder anti-submarine homing torpedoes for which two twin mountings were fitted amidships, as seen in the photo, but these were soon discarded as they were unsuccessful. (© IWM HU 129759)

RIGHT • HM Ships *TRAFALGAR, DUNKIRK* and *JUTLAND*
The Early Battle-class destroyer *Trafalgar*, leader of the 7th Destroyer Squadron, seen in company with the Later Battle-class *Dunkirk* (right) and *Jutland* in the Mediterranean in June 1958. The Battles were larger ships than the O-Z and C classes, to meet the need for a heavier anti-aircraft armament, especially for defence against close-range attacks by dive-bombers and torpedo bombers. In 1942 16 ships were ordered, known as the Early Battle Class, followed by another 26 in the following year, the Later Battle Class (though only eight of the latter were completed). *Trafalgar* was built by Swan Hunter, Wallsend, and completed on 23 July 1945. She was in reserve from 1947 to 1958, before recommissioning for Home/Mediterranean service with the 7th Destroyer Squadron on 20 May 1958. She entered Portsmouth harbour for the last time on 20 March 1962 and paid off into low category reserve. In 1970 she was sold for breaking up. (Royal Navy Image Archive)

D77

D97
D22
D68

LEFT • HM Ships *AGINCOURT, BARROSA, AISNE* and *CORUNNA*
The Later Battle-class destroyer *Agincourt* (foreground), is seen in company with the other members of her squadron – *Barrosa* (D68), *Aisne* (D22) and *Corunna*, all Later Battles, in the Mediterranean. Their class had a single 4.5-inch gun abaft the funnel, to meet criticism that the Early Battles lacked firepower aft. *Agincourt* was the leader of the 4th Destroyer Flotilla (from 1951 known as the 4th Destroyer Squadron) from 1948 to 1958, initially serving in the Home Fleet, with a Mediterranean deployment in 1951–52. From 1954 to 1958 the squadron was on Home/Mediterranean general service commissions. *Agincourt* was converted into a radar picket destroyer in Portsmouth Dockyard 1959–62. The other three ships in the photo received similar conversions. *Agincourt* had been built by Hawthorn Leslie, Hebburn, and completed on 25 June 1947. In June 1967 she was reduced to operational reserve but in July 1968 was listed for disposal. (Royal Navy Image Archive)

ABOVE • HMS *PALADIN*
The high specification of the Type 15s meant that the full conversions were expensive. To economise, ten destroyers were given limited conversions to Type 16: the old superstructure was largely retained, and the armament and equipment fit was less sophisticated than in the Type 15s. *Paladin*, seen here in October 1958, was converted from a P-class destroyer (the second emergency flotilla) in Rosyth Dockyard between November 1952 and February 1954. She was then placed in reserve. In September 1957 she was converted for minelaying – the rails can be seen on the stern – and could carry 30 mines. Her torpedo tubes and three of her 40mm Bofors guns were landed. From January 1958 to January 1961 she was in the Nore Local Squadron, and in June 1961 paid off for disposal. She had been built by John Brown, Clydebank, who completed her in December 1941, and she saw war service in the Far East and Mediterranean. (Author's collection)

R09
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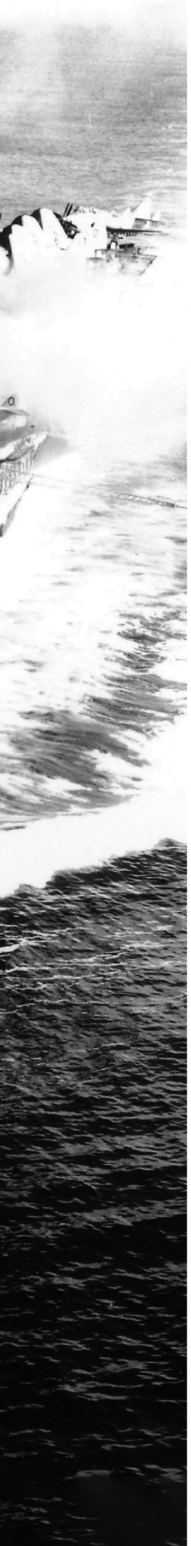
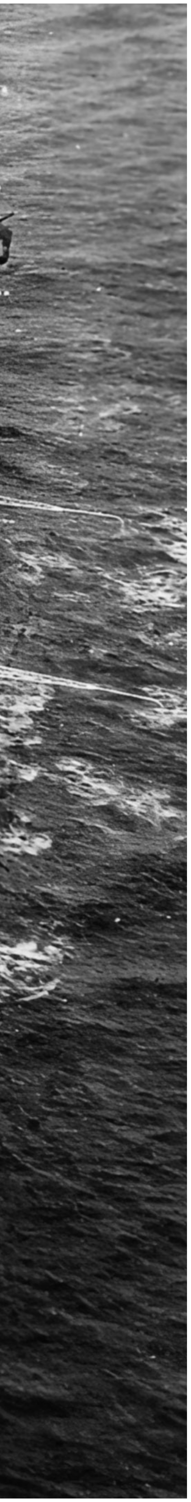


LEFT • HMS *ARK ROYAL*

Japan's entry into the war had prompted the decision to order the four large Audacious-class aircraft carriers (though two ships were cancelled when the war ended). Their design improved on *Implacable* through better underwater protection, revised machinery layout, thicker flight deck armour, more electricity-generating machinery, larger aircraft lifts, and increased hangar height. *Ark Royal* was launched at Birkenhead in May 1950, after seven years on Cammell Laird's slip. Commissioned on 22 February 1955, in June she embarked her complement of Sea Venom, Sea Hawk, Skyraider, Wyvern and Gannet aircraft. In October she was deployed to the Mediterranean for five months. In the first half of 1958 *Ark Royal* was again in the Med before a five-month refit at Devonport, followed by Mediterranean and Home Fleet service. She is shown after her 1958 refit, still with her original 5½° angled flight deck. She and her half-sister *Eagle* provided the spearhead of the RN's postwar carrier force for three decades, giving it a powerful strike capability. (Royal Navy Image Archive)

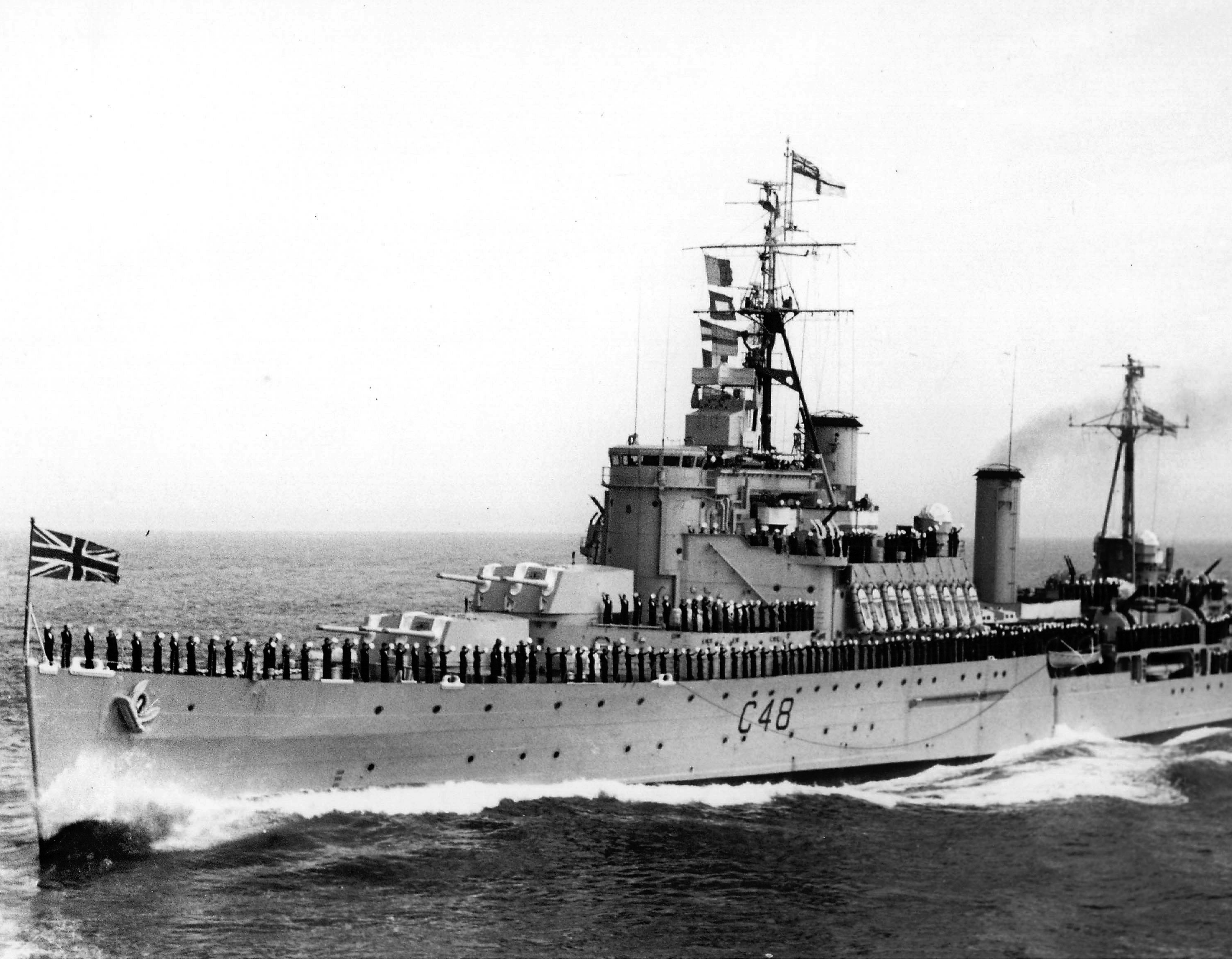
ABOVE • HMS *EASTBOURNE*

Eastbourne, seen leaving Malta in the late fifties, was a Whitby-class (Type 12) anti-submarine frigate completed in January 1958. The Whitby design was a response to the threat posed by fast Soviet Union submarines, and two sets of steam turbines gave a speed of over 30 knots. The raised fore end was designed to cope with extreme North Atlantic weather, allowing high speeds to be maintained. *Eastbourne* had four fixed and two revolving torpedo tubes on each beam, but these were soon removed from her and her five sister ships. Shortly after completion she was in the Fishery Protection Squadron, and engaged in the first Cod War in September 1958. In June 1959 she joined the 4th Frigate Squadron for Home/Mediterranean service. In February 1964, after a long refit at Rosyth, she recommissioned for the 17th Frigate Squadron, the Dartmouth Training Squadron. From 1972 to 1977 she was a sea-going training ship for engineer apprentices, and was employed in the third Cod War in May 1976. (Royal Navy Image Archive)



LEFT • RFA *TIDESURGE* and HM Ships *DAINTY* and *CENTAUR*
RFA *Tidesurge* (centre) undertaking the replenishment at sea (RAS) of the Daring-class destroyer *Dainty* and aircraft carrier *Centaur*. She had been completed in August 1955 by I. L. Thompson & Sons, Sunderland, as *Tiderange*, and was renamed *Tidesurge* in 1958, to avoid confusion with other ships of the class. From 1963 to 1967 she was deployed to the Far East, and supported ships patrolling during the Indonesian confrontation. She served until May 1976. The Royal Navy had been slower than the US Navy to perfect replenishment at sea and adopt it as a standard operation, but its experience in the Pacific war, and later the upgrading of eight Wave-class tankers, led to the introduction of the four early Tide-class ships in 1955, as the Royal Navy's first purpose-built fast fleet replenishment tankers, which were capable of 18 knots and had three RAS rigs on each side, and astern refuelling arrangements, so that they could replenish three ships simultaneously. (Author's collection)

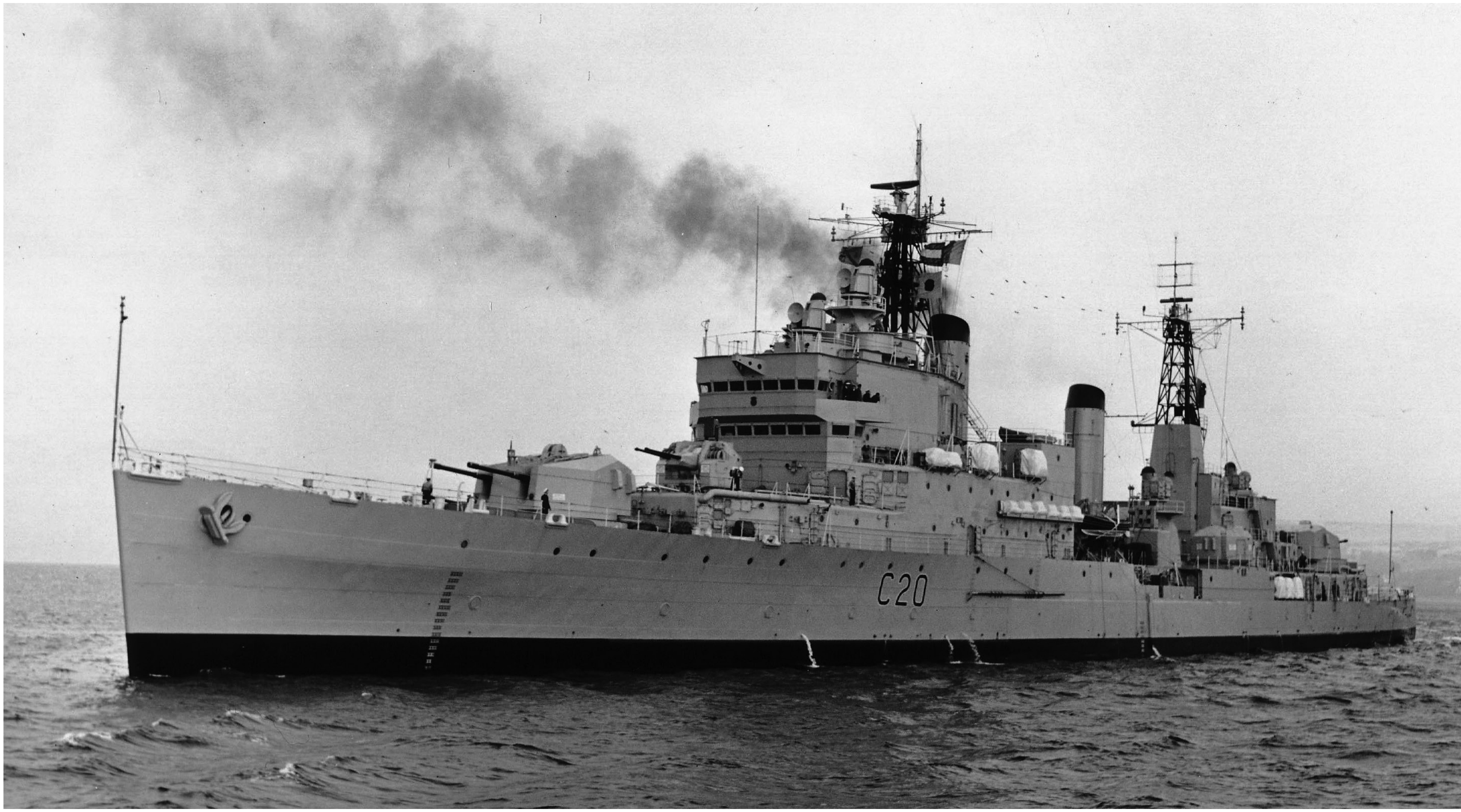
ABOVE • HMS *APOLLO*
The Manxman-class fast minelayer *Apollo* was recommissioned from reserve in 1951, following the outbreak of the Korean War, and served as a 'despatch vessel' in the Home Fleet, frequently flying the flag of the Commander-in-Chief (C-in-C). She had been completed in February 1944 by Hawthorn Leslie, Hebburn, the last of six ships in her class. Her two steam turbines gave her a top speed of 40 knots, allowing her to complete night-time minelaying missions expeditiously. Her first task was to lay 1,170 mines south-west of Seine Bay to protect the Normandy beachhead, which was followed by further minelaying in the Channel, in preparation for the invasion of France. Thereafter, she undertook counter U-boat minelaying off north Cornwall, in the north-west approaches off Malin Head in the Irish Sea, off Norway, and in the Kola Inlet. She finally paid off at Portsmouth in April 1961 and was sold for breaking up in the following year. (© IWM HU 129726)


C48

LEFT • HMS *GAMBIA*
The Fiji (or Colony)-class cruiser *Gambia* is seen 'cheering ship' when saluting the royal yacht. She was ordered under the 1938 Naval Estimates, as part of the large rearmament programme in the late thirties, and built by Swan Hunter, Wallsend, who completed her on 21 February 1942. The Fiji class was developed from the Southampton class but had vertical funnels rather than the raked funnels of the Southamptons. The Fijis that survived the war served throughout the fifties, though only two (*Ceylon* and *Newfoundland*) received any significant modernisation. *Gambia* was brought forward from reserve in 1950 to serve in the 1st Cruiser Squadron in the Mediterranean Fleet. From June 1955 to March 1956, and May 1957 to November 1958, she was on Home/East Indies service and was the last flagship of the East Indies station, which closed in October 1957. Her final commission was mainly on Home/Mediterranean service but included a tour of the Far East. She paid off at Portsmouth on 7 December1960. (Royal Navy Image Archive)

ABOVE • HMS *SHEFFIELD*
The Southampton-class cruiser *Sheffield* seen leaving Malta in the late fifties, after her final major refit in Chatham Dockyard (between June 1956 and June 1957), during which her tripod foremast was replaced by a lattice mast and she received an enclosed bridge. She recommissioned on 1 July 1957 for Home/Mediterranean service and finally paid off from active service on 24 June 1959 at Portsmouth, joining the reserve ships group there as headquarters and accommodation ship for reserve ships personnel, a role she held until 1963. *Sheffield* had been ordered under the 1934 programme from Vickers-Armstrongs, who built the ship at their Walker yard on the Tyne, with steam turbines manufactured by their Barrow yard. She was completed on 28 August 1937. Her early fifties service was on the North America and West Indies station, punctuated by periods in home waters, and in 1955 eight months were spent in the Mediterranean Fleet. (Royal Navy Image Archive)

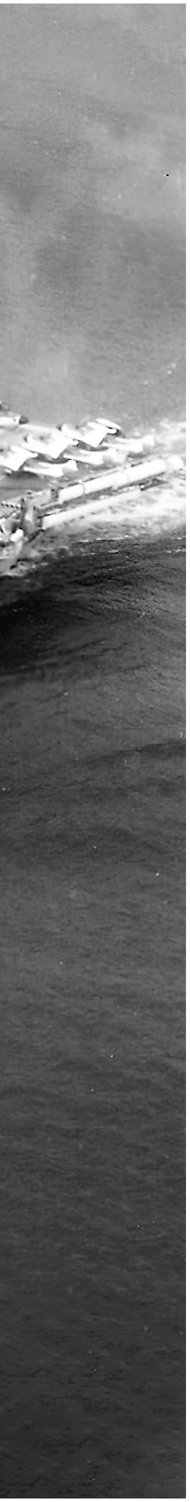
C57



LEFT • HMS *CUMBERLAND*
Cumberland seen leaving Malta for the last time in October 1958, flying a paying-off pennant as she heads for the UK. She had been converted into a trials cruiser in Devonport Dockyard between 1949 and 1951 and was employed in the trials of a variety of weapon and sensor systems, propellers, and a pre-wetting system for washing down all her weather surfaces with sea water after contamination by radioactive material in the event of being in the fall-out area from an atomic explosion. She was used for trials of the new 6-inch and 3-inch guns which were to be fitted in Tiger-class cruisers, and in the photograph has a 6-inch turret forward and a 3-inch turret aft. She had been built by Vickers-Armstrongs, Barrow, and completed on 23 January 1928, the first of the County-class heavy cruisers to enter service. Her war service was in the South Atlantic, Arctic convoys and the Far East. She was sold for breaking up in 1959. (Royal Navy Image Archive)

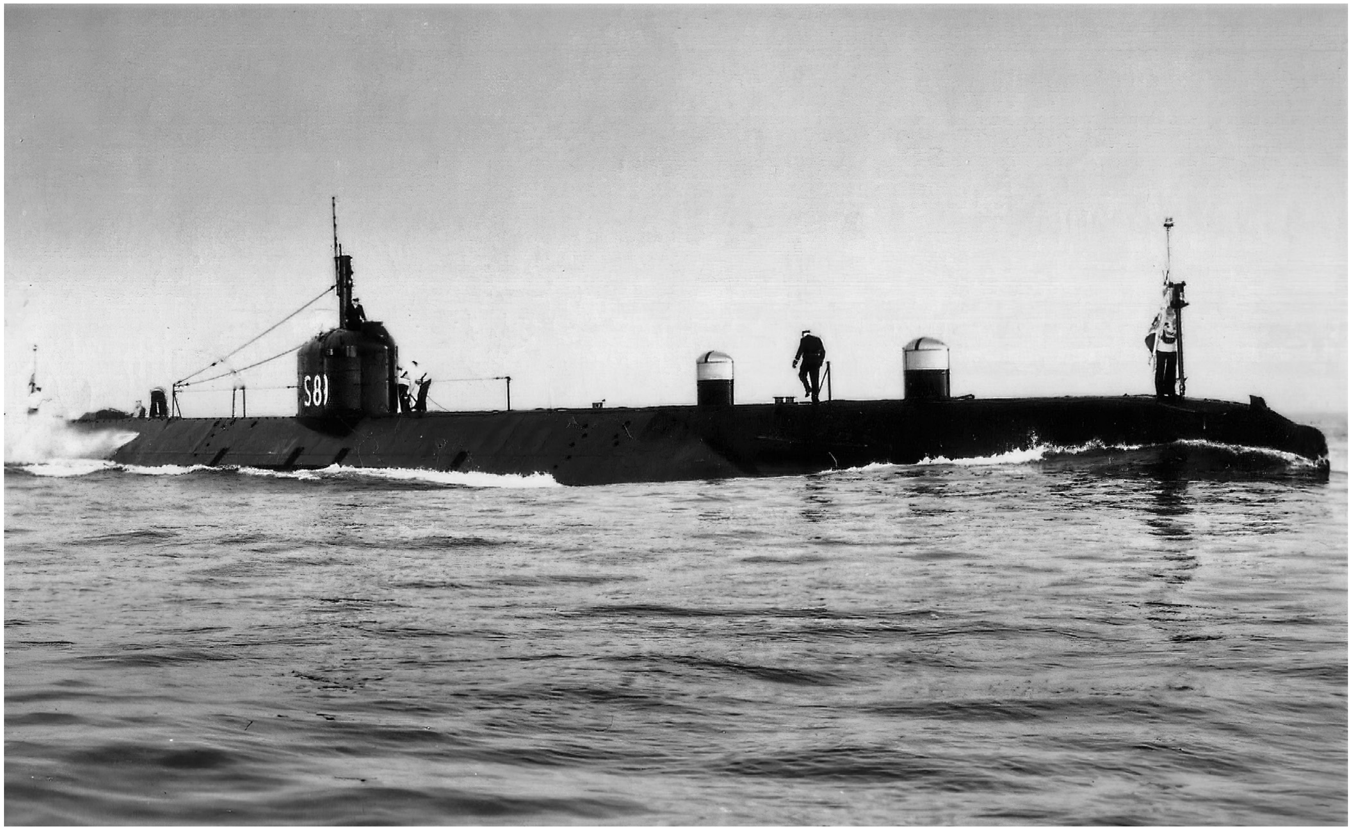
ABOVE • HMS *TIGER*
In 1941–42 seven cruisers of the new Minotaur class were ordered, as modified versions of the Fiji class. Only *Minotaur, Superb* and *Swiftsure* were completed before the end of hostilities. One ship was cancelled, and work was suspended on the other three, *Tiger, Defence* and *Blake*, which had all been launched. A new design was drawn up, incorporating two twin mountings of new fully automatic high elevation Mk 26 6-inch guns, with each gun firing 20 rounds per minute, and the new rapid firing Mk 6 3-inch anti-aircraft gun, also in two twin mounts. After an 18-year gestation period, *Tiger* (seen here in early 1959) was finally completed and at her commissioning ceremony, at Clydebank on 24 March 1959, her captain proclaimed, 'Guided missiles … have their disadvantages. The fully automatic guns combine the best of both worlds. Push-button warfare is here.' *Tiger* served in the Home and Far East fleets until 1968 when she was taken in hand at Devonport for conversion to a command cruiser. (Royal Navy Image Archive)

R38



LEFT • HMS *VICTORIOUS*
After World War II it was decided that the Illustrious-class carriers would have to be reconstructed to be able to operate modern aircraft. A hangar height of 17ft was needed and aircraft weight would be up to 30,000lb. *Victorious* was taken in hand at Portsmouth in 1950 for what became a very lengthy and expensive modernisation, the ship being rebuilt from the hangar deck up. The reconstruction was delayed by design changes and the belated decision that the boilers would have to be replaced, by which time the armoured deck had been refitted, resulting in a considerable amount of completed work being dismantled. A new 8½˚ angled flight deck, two steam catapults, Type 984 radar and six twin 3-inch guns were fitted. The work was finally completed in January 1958. By then plans to modernise others of the class had long been dropped and the other ships had been scrapped. *Victorious* is seen when operating with the US Navy in July 1959 in the west Atlantic. (US Navy)

ABOVE • HMS *RORQUAL*
Rorqual was the second boat of the Porpoise class, the first class of postwar designed operational submarines. She was commissioned on 24 October 1958, and is seen here in Loch Long in September 1959. Built by Vickers-Armstrongs, Barrow, she had conventional Admiralty standard range diesel-electric engines and incorporated the improvements that had been introduced in the fully modernised T- and A-class submarines. The eight boats of the Porpoise class were considered to be very successful, and considerably superior to the Soviet Whiskey class, on account of their quiet operation, comparatively high submerged speed (16 knots) and good habitability. They had an operational diving depth of 500ft.
A press release noted, 'To combat the boredom of periods of long periods of submerged patrol the submariners enjoy the use of a cinema projector and tape recorder, relax on foam latex mattresses and have the modern amenities of strip lighting, Formica and wood panelling, nylon curtains and air conditioning.'
(Conway Picture Library)



LEFT • HMS *HERMES*
Laid down on 21 June 1944, but not launched until 1953, *Hermes* was to have been completed to the *Centaur* design, but delays to her construction by Vickers-Armstrongs at Barrow allowed her to be given a specification closer to that of *Victorious*, albeit with a slightly smaller air group. She is seen on full power steaming trials in the English Channel on 18 November 1959, seven days before she was commissioned. She was equipped with a fully angled flight deck, steam catapults, mirror landing aids and Type 984 radar. Her first full air group was embarked in July 1960, and this comprised Scimitar, Sea Vixen, Gannet and Whirlwind aircraft. She was regarded as a very successful ship and her sixties' service as a frontline fixed-wing aircraft carrier was dominated by periods in the Far East Fleet. She was on that station when the Indonesian confrontation began in January 1963. In 1971–73 she was converted into a commando carrier, and served until 1984. (Conway Picture Library)

ABOVE • HMS *SERAPH*
The S-class *Seraph* was the first British boat to be modified for trials as a fast submarine, in 1944, to emulate the fast U-boats that Germany was known to be developing. Her hull and fin were streamlined, the torpedo tubes were blanked over and guns removed, and her motors and batteries were upgraded. This increased her underwater speed from 8.75 to 12.5 knots. Later her hull was padded for protection against the impact of practice torpedoes when serving as a target. Commissioned in 1942, she was best known for her role in Operation *Mincemeat*, in which she carried the body of 'The Man Who Never Was', a corpse dressed in a Marine's uniform, carrying a fake correspondence about planned landings in Sardinia and Greece (they were actually to be in Sicily). The body was deposited off the Spanish coast and was picked up by Spaniards, who passed the documents to Germans, who fell for the ruse. Postwar, *Seraph* was based at Faslane (until 1960) and Gosport (1960–62). (Author's collection)

CHAPTER 2

REBUILDING THE NAVY 1960–1969

The sixties was to be the decade in which Britain's economy faltered and its empire declined rapidly, leading to a radical reassessment of the country's capability as a world power. The global scope of the Navy's operations would be severely pruned so that the continuing demands of the Cold War could still be accommodated. Nevertheless, in this decade the Navy had to deal with numerous post-imperial 'bushfire' conflicts and emergencies in former British territories. Technological change was another important driver reshaping the Navy, as nuclear and gas turbine propulsion, guided missiles, cruise missiles and computerisation of ships' systems began to find their place.

In the sixties defence spending fluctuated between 6.5 per cent and 7.0 per cent of GDP until 1968 when, following the 1966 and 1967 defence reviews, it dropped to 6.0 per cent and ended at 5.2 per cent in 1969.[1]

The Navy entered the new decade with most of the commitments it had had in the early fifties, but with fewer ships. The East Indies Station had gone, though a strong force was stationed in the Arabian Seas and Persian Gulf, consisting of a frigate squadron, the amphibious warfare squadron and a minesweeper squadron. The Far East Station had become more important, at the expense of the Mediterranean Fleet and other stations, and was redesignated the Far East Fleet in November 1962.[2] Submarine divisions had been established at Singapore, Sydney and Halifax (Nova Scotia), in addition to the squadrons based at Gosport, Devonport, Faslane and Malta.

The fleet (including ships in reserve and long refit, but not those listed for disposal) in early 1960 consisted of the numbers of vessels given in the table on the next page.[3] In addition, there were the support ships manned by the Royal Fleet Auxiliary (RFA), including tankers, stores ships and ocean tugs.

The Navy Estimates for 1961–62 (the annual budget for the Navy) allowed for an operational fleet of 144 ships including four aircraft carriers, one commando carrier, four cruisers and 53 destroyers and frigates, plus submarines (the number of

Aircraft carriers	7	Depot ships	5	Ocean salvage vessels	2
Cruisers	5	Maintenance & repair ships	9	Boom defence vessels	49
Fast minelayers	3	Survey ships	7	Tank landing ships	11
Destroyers	42	Survey launches	5	Tank landing craft (including Army craft)	20
Frigates	105	Diving trials ship	1	Royal yacht	1
LSH and minesweeper support ships	2	Coastal minesweepers	103	Ocean tug	1
Submarines	48	Inshore minesweepers	79	Small minelayers	5
Ice patrol ship and netlayer	2	Fast patrol boats	12	Ocean minesweepers	11
GW trials ship	1	Seaward defence boats	17	Trawlers	5

which was not specified) and smaller vessels. There were also 41 ships engaged in trials and training and 70 auxiliaries and support ships, plus the ships in reserve or long refit.[4]

In July 1960 the title of the Reserve Fleet was abolished and the remaining ships were redesignated as being in operational reserve, under the Reserve Ships Authority, controlled from Portsmouth. This initially consisted of one cruiser, two destroyers, 15 frigates and one fast minelayer.[5] In 1968 ships in operational reserve became known as the Standby Squadron and were berthed in Chatham Dockyard.

Personnel numbers in 1960 totalled 102,000, showing a 33 per cent drop in the previous decade. There were 10,300 Royal Navy officers and 79,000 ratings; 580 Royal Marines officers and 8,375 other ranks; 250 WRNS officers and 3,125 ratings; and 370 in Queen Alexandra's Royal Naval Nursing service.[6] The re-engagement rate of 65 per cent was the highest since 1936. There were 83 admirals (more than one for every two operational ships), a figure which the Navy said was to be reduced to 72 by 1962 (but in 1964 there were still 77). In 1962 it was reported that 37,000 men were serving afloat out of trained numbers of 86,970.[7]

New construction of surface ships at the start of the decade was focused on four County-class guided missile destroyers and nine frigates of the Rothesay and Tribal classes. A further eight frigates and two cruisers were fitting out. Orders for the first four ships of the Leander class, a development of the Rothesays, were being allocated to shipyards in place of Rothesay- and Salisbury-class frigates previously ordered from them. Submarine construction consisted of the nuclear-powered *Dreadnought* (with the second boat *Valiant* ordered in October 1960) and the diesel-electric Oberon and Porpoise classes, three of which were under construction with another five fitting out. Designs were being drawn up for two new assault ships. In 1961 a design study for a possible Polaris missile-armed nuclear-powered submarine was underway.

On 24 March 1961 the Nore Command (which was established in 1752) was closed, with its remit absorbed by the Portsmouth Command (south of the Wash) and the Scotland Command (north of the Wash). The post of Commander-in-Chief, The Nore, was abolished and a new post of Flag Officer Medway would be held by the Admiral Superintendent, Chatham Dockyard, in a dual role.[8] Also in 1961, the C-in-C Home Fleet moved ashore to Northwood in Middlesex and took command of all ships and submarines in home waters. The home commands lost control of sea-going ships. In addition, the geographic boundaries of the Home Fleet were extended to include the 8th Frigate Squadron at Bermuda.[9]

Starting with the September 1961 intake, all general list officer cadets were to undergo a two-year period of common training, with the first year comprising three terms at Dartmouth and one term at sea in the Dartmouth Training Squadron. They were then promoted midshipman and went to sea for 12 months in the fleet, after which they were promoted acting sub lieutenant. Seaman and Supply and Secretariat specialists would return to Dartmouth for a further year followed by a year at various specialist training schools to sub-specialise in aviation, submarines, gunnery, torpedo and anti-submarine, navigation and direction or hydrographic surveying. In this

fourth year they would also be trained in the duties of operations officer and officer of the watch. On successful completion of the fourth year they would be confirmed as sub lieutenants. Most engineering specialists would spend their third, fourth and fifth years reading for an honours degree at the Naval Engineering College, Manadon, near Plymouth, and would then sub-specialise in marine engineering, weapons and electrical engineering, air engineering or submarine engineering. A direct graduate entry scheme into the engineering specialisation was also introduced to help meet the growing need for technical officers.[10]

After the war Navy Days had been introduced as a replacement for Navy Week.[11] Each home dockyard was open to the public for four days each year, but this was soon reduced to three. A typical example of postwar Navy Days was that at Portsmouth, 5–7 August 1961. The line-up of ships open to the public included the commando carrier *Albion*, destroyer *Corunna*, frigates *Scarborough*, *Rothesay*, *Berwick*, *Brighton*, *Keppel* and *Volage*, submarines *Porpoise*, *Rorqual* and *Tally Ho!*, minelayer *Plover*, two minesweepers, two fast patrol boats and the RFA *Orangeleaf*. Amongst the many other attractions were harbour trips in landing craft, an air display by four Hunter aircraft of 764 Squadron, a search and rescue display by a Whirlwind helicopter of 771 Squadron, displays by Royal Marines' Gemini craft and Special Boat Section, a diving display by divers from HMS *Vernon*, a seaboat display from the minelayer *Plover*, demonstrations of atomic defence and damage control methods, an exhibition of dockyard apprentices' work at No. 3 Shipbuilding Shop (including the Constructive, Marine Engineering, Electrical Engineering and Navy Works departments), and music from the bands of the Royal Marines.[12] Portland in 1968 offered the frigates *Undaunted*, *Murray*, *Lincoln* and *Leopard*, the submarines *Tiptoe*, *Alaric* and *Astute*, the helicopter support ship *Engadine*, two minesweepers and a fast patrol boat, as well as harbour trips in the minesweepers, a Royal Marines band and helicopter flying displays.[13] At Devonport in 1959 the ships open to the public were the aircraft carrier *Eagle*, cruiser *Belfast*, destroyers *Delight* and *Matapan*, frigates *Loch Fyne*, *Loch Insh*, *Roebuck* and *Venus*, trials ship *Girdle Ness*, submarine *Sea Scout* and ocean minesweepers *Acute* and *Jewel*. There were also a range of displays including an aerial attack flypast, air-sea rescue, and torpedo and Squid firing.[14]

In June 1961 British warships, led by the aircraft carriers *Victorious* (flagship of the Far East Fleet) and *Centaur*, and the commando carrier *Bulwark*, were deployed to the Persian Gulf to reinforce the three Loch-class frigates and ships of the Amphibious Warfare Squadron that were already on that station. This build-up was occasioned by threats from Iraq whose troops had moved to the border with the newly independent Kuwait. Marines of 42 Commando were airlifted from *Bulwark* to secure Kuwait airfield and other key positions, and were joined on the next day by 45 Commando, which was flown in from Aden. Centurion tanks were disembarked from the landing ship *Striker* and these initial forces were soon joined by other UK troops and RAF Hunters flying from Bahrain. Ultimately 45 British warships, including a minesweeper squadron from Malta, were deployed to the area, with the former frigate *Meon* acting as the command and control ship for the operation. This show of strength curbed Iraq's aggressive ambitions and by mid-August it was clear that the invasion of Kuwait had been averted. This was the first operation in which a commando carrier was employed, effectively demonstrating its capability.[15]

The most demanding Royal Navy operations in the sixties were those in the Far East during the Indonesian confrontation between January 1963 and March 1966. British and Commonwealth forces fought against Indonesian forces which were infiltrating British territory in northern Borneo, in advance of the planned establishment of the new state of Malaysia. In 1962 northern Borneo consisted of the British protectorate of Brunei and the British colonies of Sarawak and North Borneo (later known as Sabah). The rest of the island of Borneo was made up of the Indonesian provinces of Kalimantan. President Sukarno of Indonesia opposed the establishment of Malaysia, wanting instead an enlarged group of Indonesian provinces. The fighting mainly involved small-scale jungle clashes in the border areas, and ended up with a victory for the British Commonwealth. British

warships and auxiliaries were extensively involved in supporting the troops ashore, ferrying Royal Marine commandos, Gurkhas and supplies in helicopters and landing craft from the commando carriers *Albion* and *Bulwark*, and patrolling the coast and rivers to intercept Indonesian craft carrying troops.

The crisis began on 8 December1962 when some 4,000 pro-Sukarno rebels, known as the North Kalimantan National Army, seized settlements in Sarawak and Brunei and tried to capture the Sultan of Brunei, who called on the British for help. Within hours two companies of Gurkhas had been flown in from Singapore and, augmented by other units and Royal Marine commandos, soon suppressed the rebels.[16] Two minesweepers, *Fiskerton* and *Chawton*, with Royal Marines on board, were tasked with rescuing the British Resident and staff at Limbang, Sarawak, who had been taken hostage. After a fierce battle, in which eight Royal Marines and 35 rebels were killed, all of the hostages were rescued alive.[17]

In January 1963 Indonesia announced a policy of confrontation against Malaysia and in April the first cross-border incursions into North Borneo and Sarawak were made by Indonesian forces. Thereafter British troops had to defend the nearly 1,000-mile border in jungle-covered mountain terrain. There was a rapid build-up in naval forces: the aircraft carriers *Ark Royal* (which suffered engine failure and was replaced by *Victorious*) and later, *Centaur*, and additional destroyers, frigates and submarines, were sent to reinforce the aircraft carrier *Hermes* and commando carrier *Albion*. Seaborne raids by Indonesians, which targeted mainland Malaysia as well as northern Borneo, were nearly all intercepted and driven off.

In February 1963 a boarding party from the destroyer *Barrosa* stopped a small craft with 13 pirates (who were arms smugglers) aboard and in an exchange of shots an able seaman was fatally wounded whilst three of the pirates were captured.[18]

In November 1964 a small Indonesian craft attacked *Fiskerton* with grenades off Singapore. One grenade exploded aboard the minesweeper but no casualties were sustained, and in the action the three Indonesian crew were all killed by Bren gun fire from a weapon manned by a sub lieutenant.[19] In the following month the frigate *Ajax* was attacked by six Indonesian craft that were engaged in an incursion at Kuala Lumpur. She returned fire and the craft fled at high speed. By the end of 1964 the fleet employed included *Victorious*, *Bulwark* and *Centaur*, the guided missile destroyers *Hampshire* and *Kent*, 17 other destroyers and frigates, 12 minesweepers and five submarines, plus supporting vessels and Commonwealth warships.[20]

Five coastal minesweepers and four seaward defence boats in reserve at Singapore were commissioned in January 1965, partly manned by 160 officers and men flown out from minesweepers based in the UK, and another two British minesweepers were manned by the Royal New Zealand Navy. They formed the 11th Minesweeper Squadron, and augmented the minesweepers of the 6th Minesweeper Squadron already in the area. At this time the Far East Fleet consisted of some 80 ships, an all-time high and the largest fleet in the Navy, headed by the carriers *Victorious* and *Eagle*.[21]

On 8 January 1965 the minesweeper *Wilkieston* captured Indonesians in a small craft who had placed a bomb (which had exploded) on a merchant ship in Singapore. On 28 March the minesweepers *Maryton*, *Invermoriston* and *Puncheston* engaged in a gun battle with two heavily armed landing craft which were attempting to land troops on the south coast of Malaya. One of the landing craft was sunk, seven Indonesians were killed and 19 captured, with three RN ratings injured. Shortly afterwards the minesweeper *Lullington* captured another raiding party, and in further engagements two midshipmen from *Woolaston* and *Invermoriston* respectively were killed and *Maryton* sustained 50 bullet holes. In the *Woolaston* incident, shortly after the ship had recovered a badly injured Indonesian, a sampan which had been intercepted blew up alongside the minesweeper, having been booby trapped. As well as the fatality, eight men from *Woolaston* were wounded, and one blown overboard.[22]

Throughout the conflict the commando carriers *Albion* and *Bulwark* alternated on station off the coast of northern Borneo and in the Strait of Malacca, operating helicopters to take Royal Marines, Army units and supplies to forward bases and patrols deep in the jungle. On one transit *Albion* was attacked with gunfire from an Indonesian patrol boat at close range: the boat was rammed and sunk by *Albion*. Each night up to 15 warships were deployed in the conflict area, reducing to two by day.[23]

By late 1965 the Indonesians had lost control of the border, but RN warships were still being engaged in combat: in January

1966 the minesweeper *Dartington* came under heavy fire from shore batteries, as did *Puncheston* in the following month. President Sukarno was overthrown in March 1966 and peace followed; Indonesian forces withdrew from the border area and a treaty with Malaysia was signed in August 1966.

From 1 January 1964 the length of general service commissions (except for Persian Gulf frigates) was increased from 24 to 30 months, and refits of ships would take place after 30 months in service rather than 24 months. There would be two overseas legs in each commission, each normally of 8–10 months including passage time, separated by a period of home sea service, with a total normally of not more than 18 months' overseas service. These changes were intended to arrest the trend towards shorter times between periods of overseas service. Ships' companies would be replaced in three one-third stages, rather than all together, so that the effect on the performance of increasingly complex ships would be less.[24]

On 31 March 1964 the Admiralty ceased to be a separate department of state, being subsumed by the new Ministry of Defence (MoD) from the next day. The Board of Admiralty, which had been established by Charles I in 1628, was abolished and replaced by the Admiralty Board of the single unified Defence Council (for all three services) headed by the Secretary of State for Defence. The Admiralty building (opened in 1788) in Whitehall continued to be used for offices of Royal Navy departments until 1969, when it was announced that it would be handed over to other government departments.[25] The title First Lord of the Admiralty also disappeared to be replaced by the more junior post of Minister of State for the Navy. Thereafter the Admiralty Board met formally only once a year, whilst the Navy Board was responsible for the day-to-day working of the Navy.[26]

In December 1962 an agreement was signed in Bermuda which would allow Polaris missiles (without warheads) to be purchased from the USA, so that the Royal Navy could take over the nation's strategic nuclear deterrent from the RAF. The warheads, and the four submarines (ordered in 1963) which would carry the missiles, would be supplied by the UK. In February 1964 the keel of *Resolution*, the first of the class, was laid down. Plans to build a fifth boat, to be named *Ramillies*, were dropped in 1965. It was believed that it would be possible always to maintain at least one boat on patrol, but a fifth boat would have allowed two to be on patrol at all times. *Resolution* was commissioned in October 1967 and after trials and work-up fired her first Polaris missile off Cape Kennedy on 15 February 1968. She began her first patrol in June 1968. Each boat had two crews, one on patrol, the other on leave or undergoing training. These submarines were based at Faslane, where the facilities received a major upgrade: the new base being commissioned in 1967 as HMS *Neptune*, and a new armament depot for the Polaris missiles and other weapons was built at nearby Coulport. In June 1967 a nuclear refuelling and refitting complex was completed in Rosyth Dockyard.[27] Another complex was officially opened at Chatham Dockyard on 29 June 1968, the first submarine to enter one of the two docks there being *Valiant* in May 1970.[28,29]

On 1 March 1966 the first Beira patrols were started off the coast of Mozambique, intercepting tankers heading for the port of Beira carrying oil that was destined for Rhodesia (formerly Southern Rhodesia) via a pipeline. This had been prohibited under United Nations sanctions that were authorised after the all-white government of Rhodesia made a unilateral declaration of independence. The frigate *Lowestoft* was soon joined on patrol by her sister ship *Rhyl* and the carrier *Ark Royal*, which had been diverted on her passage to Singapore and operated Gannet aircraft on surveillance flights. The carrier *Eagle* arrived on 15 March to relieve *Ark Royal* and flew Gannets and Sea Vixens, which were joined by RAF Shackletons when they began flights from their Madagascar base on 19 March.

On 4 April the frigate *Plymouth* failed to stop the tanker *Joanna V* which was carrying oil destined for Rhodesia: the vessel ignored challenges and entered Beira. The vessel's flag state, Greece, refused to allow the Royal Navy to stop it entering Beira. As a result of this incident the UN authorised the Royal Navy to use force if necessary. Many interceptions were made and, when intelligence suggested that the oil was bound for Rhodesia, the tankers were escorted away from Beira. Normally there were two frigates or destroyers on station, supported by

RFAs. On 19 December1967 the frigate *Minerva* ordered the French tanker *Artois* to stop but the vessel refused to comply, and *Minerva* fired shots across her bow, before the MoD signalled that *Artois* could legitimately enter the port of Beira because she was not carrying oil for Rhodesia. This led to a revision of the rules of engagement, allowing the Royal Navy to 'open fire and continue if the ship does not stop'. The Beira patrol was to continue until 1975.[30]

In 1966 the minimum entry age to the Navy was raised to 16 after the school leaving age was raised from 15 to 16. There were now continued concerns over the retention rates of ratings, which in that year were 49 per cent for those completing 12 years' service, compared to a requirement for 65 per cent; and 21 per cent for those on nine-year engagements, where the required rate was 50 per cent. (This was a concern for most of the decade; recruitment problems also became severe and in 1969 four-year engagements were introduced, but with lower pay, and entry standards were lowered. There were significant shortages of artificers.) Aircrew resignations were increasing due to a lack of confidence in the future of naval aviation; 18 RAF pilots were chosen for transfer to the Fleet Air Arm, whilst a bounty of £3,000 was to be paid to aircrew extending their service. Aircrew in ships deployed East of Suez were to be given home leave halfway through tours.[31]

The 1966 Defence Review heralded another big round of cuts to the Navy, as a contribution to a 16 per cent cut in defence spending. The government announced,

> We plan to reduce substantially the deployment of our forces in the Mediterranean; from 1968 we shall give up the Aden base and confine our presence in the Middle East to the Persian Gulf; in the Far East we shall cut the level of our forces once the confrontation is over; and, within a few years, we shall maintain no forces permanently deployed in the Caribbean or Southern Africa. We shall be able to keep our forces in Germany at the present size only if the foreign exchange costs are met. We have made it clear that, in future, Britain will not accept commitments overseas which might require her to undertake major operations of war without the cooperation of allies; nor shall we attempt to maintain defence facilities in any independent country against its wishes.[32]

Under decisions revealed in the defence review, a planned new aircraft carrier (*Queen Elizabeth*), to replace *Victorious*, and a proposed second new carrier (*Duke of Edinburgh*) to follow, were cancelled as the Navy was outmanoeuvred by the RAF during bitter inter-service rivalry.[33] The aircraft carrier force would be cut from five to three and then run down further, so that by the late seventies (when *Ark Royal* would be decommissioned) there would be no fixed-wing aircraft carriers. The construction plan for the new Type 82 destroyer, which was intended to escort the new carriers, would be abandoned, with only one ship (*Bristol*) built. The Minister for the Navy, Christopher Mayhew, and the First Sea Lord, Sir David Luce, resigned in protest at the decision to cancel the new aircraft carriers. Commitments in the Far East (at a reduced level) and the Persian Gulf would continue.

However, in 1967, as the country faced greater economic problems, the government published a supplement to the review, announcing the withdrawal of British forces in the Far East and the Mediterranean. It was projected that the numbers of Navy personnel would reduce by 16,000 officers and ratings, over five years, with much of the cut falling on the Fleet Air Arm. In 1967 the South America and South Atlantic Station was closed (the frigate *Lynx* being the last ship on station) and the remaining ships based at Malta (one destroyer and two frigates, a fleet maintenance unit and six coastal minesweepers) were withdrawn.[34]

New operational control of ships was introduced. Ships deployed East of Suez would be under the C-in-C Eastern Fleet and those elsewhere by the C-in-C Western Fleet based at Northwood. The title C-in-C Home Fleet was abolished in 1966.[35] On 5 June 1967 the last Commander-in-Chief, Mediterranean, hauled down his flag; in future ships in the Mediterranean would come under the Western Fleet command. On 1 September 1967 the Flag Officer, Middle

East, hauled down his flag at Bahrain (having transferred there from Aden in July), and was replaced by Commander Naval Forces, Persian Gulf.[36] The submarine divisions at Halifax and Sydney were disbanded in 1967 and 1969 respectively as their host nations were introducing their own Oberon-class submarines.

The future role of the Navy was defined as: deploying the Polaris missiles as the UK's contribution to the strategic nuclear deterrent of the West; playing a major part in the maritime shield forces of NATO; and providing a valuable peacekeeping function outside Europe by the flexible use of maritime power.[37] It later emerged that the role outside Europe would be performed by the periodic deployment of task groups.

The planned withdrawal of British forces in the Aden protectorate was accelerated because of the deteriorating internal security situation there, the culmination of ten years of conflict between rebel Yemeni forces and British forces, which had escalated in 1963 causing a state of emergency to be declared. In 1967 57 British servicemen were killed and 325 wounded in Aden. A show of force in May 1967 led by the carriers *Victorious* and *Hermes* failed to alter the situation. The insurgency could not be stopped and early withdrawal by airlift became the only option. *Albion* and *Eagle* arrived there in October and November 1967 respectively, to head up a force of 24 warships and RFAs, which also included the new assault ships *Fearless* and *Intrepid* and the guided missile destroyers *London* and *Devonshire*. An attempt at face-saving was made in a review of the ships, formed in four lines just off the entrance to Aden harbour, by the departing governor of Aden, on 25 November. The task of evacuating the Royal Marines garrison and other British forces in helicopters from *Albion* and *Eagle* began on the following day, and two days later Royal Marines of 42 Commando, the last to leave, were evacuated by helicopter to *Albion*. The sole submarine present, *Auriga*, was patrolling in the Gulf of Aden to intercept any unwelcome intruders, having been sent from Singapore, 4,000 miles away.[38]

By the late sixties British and American submarines were regularly trailing Soviet submarines, monitoring their characteristics and tactics, in a joint UK–US operation.[39] On 9 October 1968 the attack submarine HMS *Warspite* collided with a Soviet Echo II-class submarine which she was trailing off the Kola Peninsula. The fin (conning tower) of *Warspite* was badly damaged and both boats had to surface to inspect their damage. *Warspite*'s captain judged it was safe for his boat to dive again, and she made her way to Loch Ewe, Scotland, where a tug and helicopter waited. A black tarpaulin was used to cover the damage and the boat continued to Faslane to be inspected. *Warspite* then sailed to Barrow, where her fin was replaced with that intended for *Churchill*, which was under construction there.[40]

Personnel numbers held up fairly well in the sixties, helped by the introduction of the Polaris submarines, which absorbed 3,000 men. In 1969 the total was 95,500, compared with 102,000 in 1960.[41]

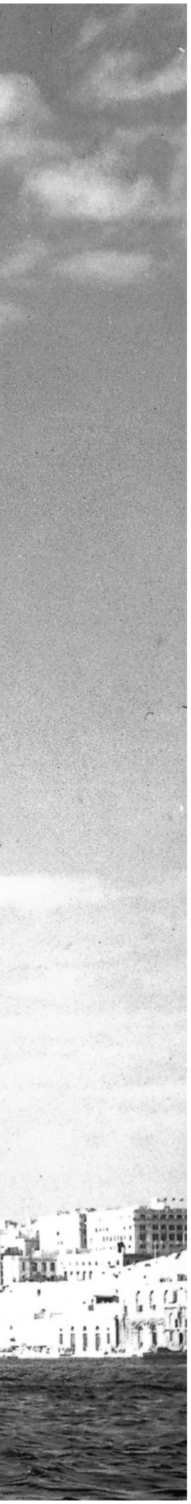
RIGHT • HMS *BROADSWORD*
Broadsword was a Weapon-class destroyer built by Yarrow, Scotstoun, and completed in October 1948. She joined the 6th Destroyer Flotilla (later the 6th Destroyer Squadron) in the Home Fleet until July 1953, when she was placed in reserve. In 1957–58 she was converted to a radar picket in Rosyth Dockyard. The conversion was not extensive but, as seen here, she gained a large lattice mast which supported the Type 965 radar, her torpedo tubes were landed, and the twin 4-inch gun in X position was moved forward to B position. She was recommissioned at Rosyth in October 1958 and joined the 7th Destroyer Squadron on Home/Mediterranean commissions. The four Weapon-class radar pickets were replaced in the fleet by the four, more capable, Later Battle-class conversions. *Broadsword* paid off for the last time at Portsmouth in February 1963. She was laid up there for disposal, before being towed to Rosyth for target trials, and was finally scrapped at Inverkeithing in 1968. (Royal Navy Image Archive)

D31

F107

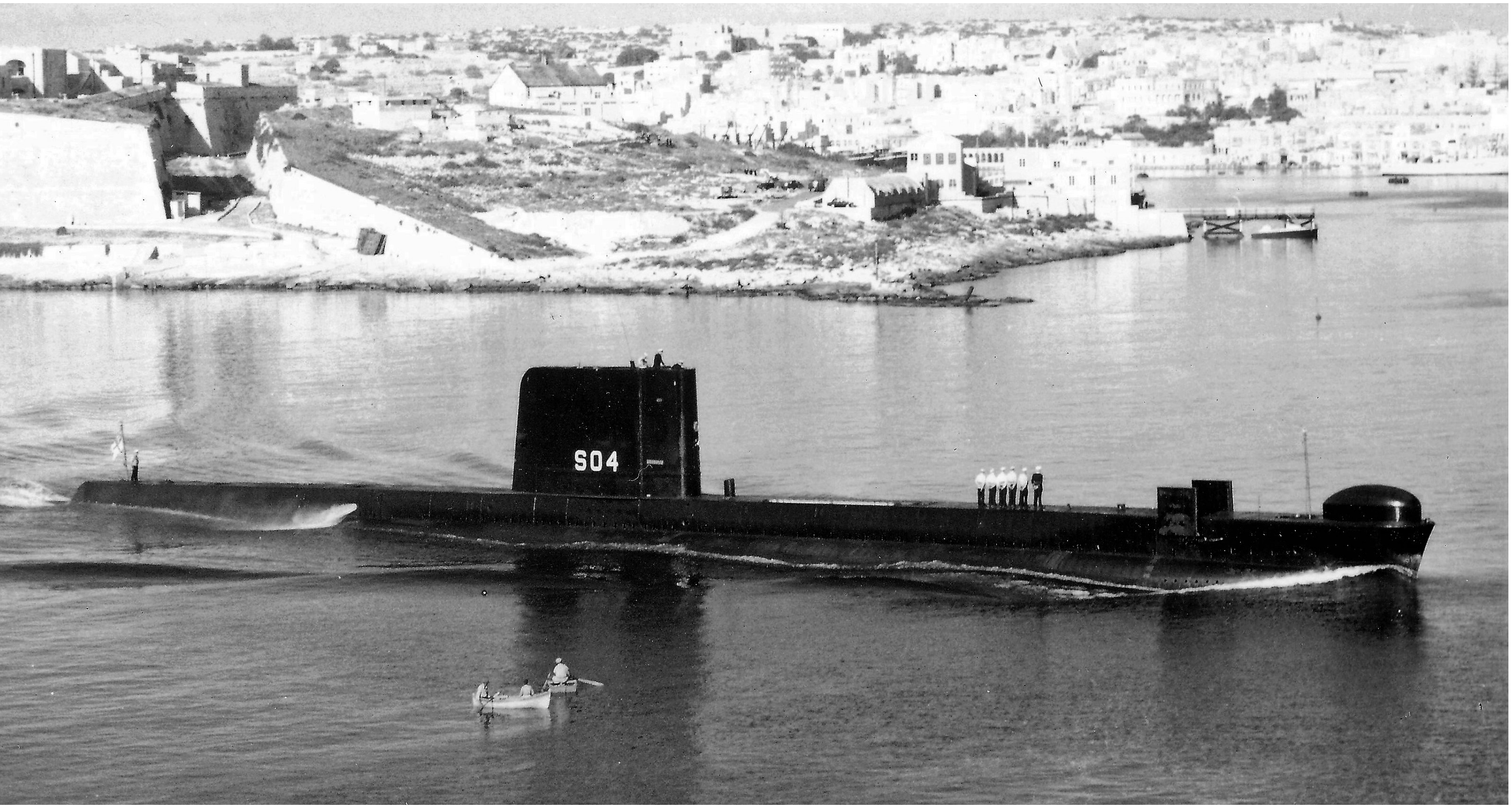
LEFT • HMS *ROTHESAY*
Rothesay was the lead ship of Rothesay-class frigates. They were an improved version of the Whitby class, also known as Type 12, and their primary role was anti-submarine warfare. *Rothesay* is seen soon after her completion by Yarrow, Scotstoun, on 22 April 1960. Her original armament of a twin 4.5-inch gun forward, twin 40mm gun aft, two Limbo anti-submarine mortars aft and 12 21-inch homing torpedo tubes on the side-decks aft is clearly visible. She joined the 8th Frigate Squadron on Home/West Indies service, followed in January 1962 by a spell in the 20th Frigate Squadron (based at Londonderry) in home waters. In May 1962 she joined the 6th Frigate Squadron, which from February 1963 became part of the 25th Escort Squadron, on Home/East of Suez service. In March 1964 she rejoined the 8th Frigate Squadron. In 1966–68 she was modernised at Rosyth and equipped with Seacat missiles and a Wasp helicopter. She recommissioned in July 1968 for Home/East of Suez service. (Author's collection)

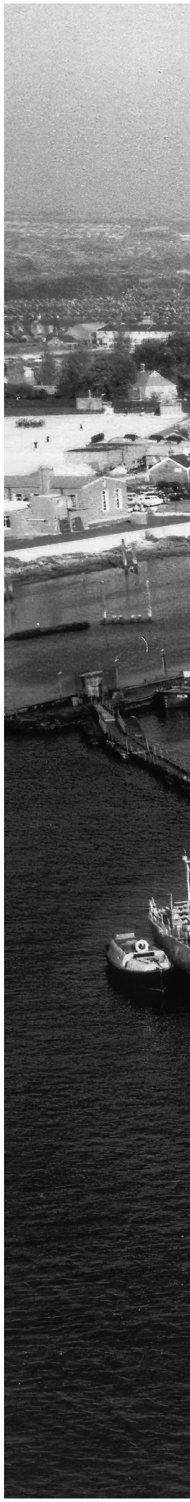
ABOVE • HMS *BULWARK*
In the 1957 Defence Review the number of aircraft carriers was reduced, and it was decided to convert *Albion* and *Bulwark* into commando carriers. They would carry up to 30 helicopters, four assault landing craft in davits, and a single Royal Marines commando unit of about 1,000 men. Between November 1958 and January 1960 *Bulwark* was converted in Portsmouth Dockyard, and is seen in August 1960 with Whirlwind helicopters. In July 1961 she was sent to Kuwait, with *Centaur*, to counter an invasion threat from Iraq, and *Bulwark*'s commandos were deployed on the border. In 1963 her Whirlwinds were replaced by Wessex helicopters, and in April 1964 she joined the Far East Fleet to become involved in the operations in Borneo until September 1965. In May 1966 she returned to the Far East for the final months of the Indonesian confrontation, and was back in the UK in March 1968. In 1970 she had her final spell in the Far East Fleet. (© IWM A 34330)



LEFT • HMS *ARK ROYAL* with Gannet
The aircraft carrier *Ark Royal* on 8 November 1960 at Malta, with flying operations in progress. A Fairey Gannet is taking off, whilst a Westland Whirlwind helicopter is on standby safety duty. *Ark Royal* had deployed to the Mediterranean for Buccaneer flying trials, but these were delayed due to technical problems and the ship stayed in Malta for ten days, during which time Scimitar and Gannet aircraft were launched from the ship by catapult for continuation flying ashore from the Navy's Hal Far air station. This was the first time swept-wing jets had been launched from a stationary ship by the Royal Navy. After spending Christmas in Malta, a dramatic change of climate was experienced in January 1961, in Arctic conditions off Greenland, to evaluate how extreme cold affected flying operations. Between March 1960 and February 1961, 8,632 aircraft sorties were flown. The ship had had a major refit at Devonport in 1958–59, which allowed her to operate Scimitar strike aircraft, and had received an improved radar outfit. (Royal Navy Image Archive)

ABOVE • HMS *BRAVE BORDERER*
The culmination of fast patrol boat development in the fifties was the Vosper-built Brave class, only two of which were ordered because of the run-down of coastal forces. *Brave Borderer* was completed in January 1960, followed six months later by *Brave Swordsman*. They were powered by three Bristol Siddeley gas turbines, which gave an impressive top speed of 50 knots, reportedly making them the fastest warships in the world. They could cruise at 44 knots for 10 hours, enabling them to complete a combat mission off the continental coast and return under cover of darkness. Constructed of welded aluminium framing, with a double-diagonal mahogany skin, and fibreglass sheathing below the waterline, their overall length of 99ft made them intermediate in size between the 'short' and 'long' coastal forces boats. *Brave Borderer* is shown on builder's trials, with an armament of two 40mm Bofors guns and four 21-inch torpedo tubes. Both Braves were used for trials and operationally until being decommissioned in 1970. (Author's collection)





ABOVE • HMS *GRAMPUS*
The Porpoise-class submarine *Grampus* seen in Malta in November 1960. She had been built by Cammell Laird and launched at Birkenhead on 30 May 1957. She was commissioned on 19 December1958. On 1 April 1963, *Grampus* returned to Gosport after spending three weeks under the Arctic icecap looking for holes in the ice, during which she suffered minor damage to her hull in the ice. On 11 January 1968 she was snagged in the nets of the French trawler *Formalhaut* in the English Channel. She surfaced and both crews spent three hours disentangling the nets. In 1972 she operated in the eastern Atlantic with USS *Tigrone* in a joint oceanographic operation. She was placed on the disposal list in December 1978, but was then converted at Portsmouth Dockyard into a static underwater target. *Grampus* sank on 18 September 1980 in Loch Fyne as she was being towed as a sonar target. She sits upright there in 115 metres of water.
(Royal Navy Image Archive)

RIGHT • HM Ships *VOLAGE, ORWELL, RAPID, MULL OF GALLOWAY* and *SHEFFIELD*
Ships in operational reserve in Fountain Lake, off Whale Island, Portsmouth, *c.*1961. In the foreground are three frigates (left to right) – the Type 15 *Volage*, Type 16 *Orwell* and Type 15 *Rapid*. Behind them are the maintenance ship *Mull of Galloway* and the Southampton-class cruiser *Sheffield*, which were being used as headquarters ships, accommodating reserve ships personnel. Note that guns and equipment have been cocooned to exclude moisture. By this time most of the former large reserve fleet had been scrapped and a smaller number of ships were kept in operational reserve, a high state of readiness which enabled them to get to sea within seven days. This rump of reserve ships was intended to provide replacements for ships which had to be withdrawn from service at short notice, perhaps because of collision damage or serious machinery breakdown. It also provided a small contingency force for use in an emergency, when the crews would be likely to include reservists who had been mobilised.
(Royal Navy Image Archive)

F41

ABOVE • HMS *ARK ROYAL* with Buccaneer
The Blackburn Buccaneer S1, a low-level strike aircraft, seen during deck landing trials on the aircraft carrier *Ark Royal* in the Mediterranean. The Buccaneer was designed for under the radar operations to replace the Scimitar in the Fleet Air Arm. Several flight deck crew are standing around the aircraft whilst the island of the carrier can be seen in the background. The trials began on 15 November 1960 and 36 deck landings were achieved by two aircraft, but their engines suffered reliability problems, and the trials were terminated early. The Buccaneer S1 was the first RN aircraft design that was not capable of free take-off from the carrier deck, and had to be catapulted off. Its two De Havilland Gyron Junior turbojet engines were underpowered, and the later S2 version had Rolls-Royce Spey engines with 40 per cent more thrust. The S2 deck landing trials were also on *Ark Royal*, in Lyme Bay, February 1963. (© IWM A 34362)

ABOVE • HMS *CENTAUR* with Sea Vixen
In the background, guests during Exercise *Shop Window* watch a De Havilland Sea Vixen about to be launched from the aircraft carrier *Centaur* by steam catapult during a flying display. Among those invited were MPs, students at the Services Staff College, Admiralty contractors and businessmen. A member of the flight deck crew is about to signal the aircraft off with a small flag. Sea Vixens were first embarked in *Centaur* in March 1961 (893 Naval Air Squadron), whilst in February 1963 she sailed to join the Far East Fleet with 892 Squadron Sea Vixens embarked. In April 1964 her Sea Vixens carried out strikes against rebellious tribesmen in the Radfan area, north of Aden. In 1965 she became flagship of the Mediterranean Fleet and returned to Portsmouth to pay off for the last time on 27 September 1965. She was used as an accommodation ship for carriers in refit at Portsmouth and Devonport before being sold for breaking up in 1972.
(© IWM A 34321)

D118
D35
D96
D154

LEFT • HM ships *DUCHESS, CROSSBOW, DIAMOND* and *BATTLEAXE*
Ships of the 5th Destroyer Squadron seen off Malta in March 1962. In the foreground is *Duchess*, the squadron leader, with *Crossbow* (D96), *Diamond* (D35) and *Battleaxe* (D118). *Duchess* and *Diamond*, Daring-class destroyers, had undergone long refits in 1960–61 at Portsmouth and Chatham respectively. The after bank of torpedo tubes was removed and replaced by a deckhouse abaft the after funnel to provide additional mess deck space, helping to improve their otherwise cramped accommodation. An improvised system of central messing was introduced, and air conditioning was fitted in the sickbay and operations room. *Crossbow* and *Battleaxe* were Weapon-class radar picket destroyers. *Battleaxe* was damaged in collision with the frigate *Ursa* on 1 August 1962, during a night-time exercise in the Firth of Clyde, and was not considered economical to repair. She was decommissioned and was sold for breaking up at Blyth in 1964. Three of *Battleaxe*'s crew, including her commanding officer, were officially reprimanded by courts martial following the accident. (Royal Navy Image Archive)

ABOVE • HMS *TRENCHANT*
The T-class submarine *Trenchant* approaches the entrance to Portsmouth harbour flying a paying-off pennant in April 1961, at the end of her RN service. She was the last unmodernised T-class boat in service and was sold for breaking up in July 1963. She had been built by Chatham Dockyard, launched on 24 March 1943, and completed on 26 February 1944. She was deployed to the Far East, operating from Trincomalee and then Fremantle, and had a distinguished war record. Commanded by Commander Arthur 'Baldy' Hezlet she sank the German submarine *U859* in the Strait of Malacca in September 1944. 'Chariot' submersibles launched by her sank a Japanese Army freighter in the following month, and in June 1945 she torpedoed and sank the Japanese cruiser *Ashigara* in the Banka Strait. From 1951 to 1959 she was in the 1st Submarine Flotilla (later the 5th Submarine Squadron), based in Malta, then returned to the UK for her final commission, in the 1st Submarine Squadron based at Gosport.
(Royal Navy Image Archive)

ABOVE • HMS *BERMUDA*

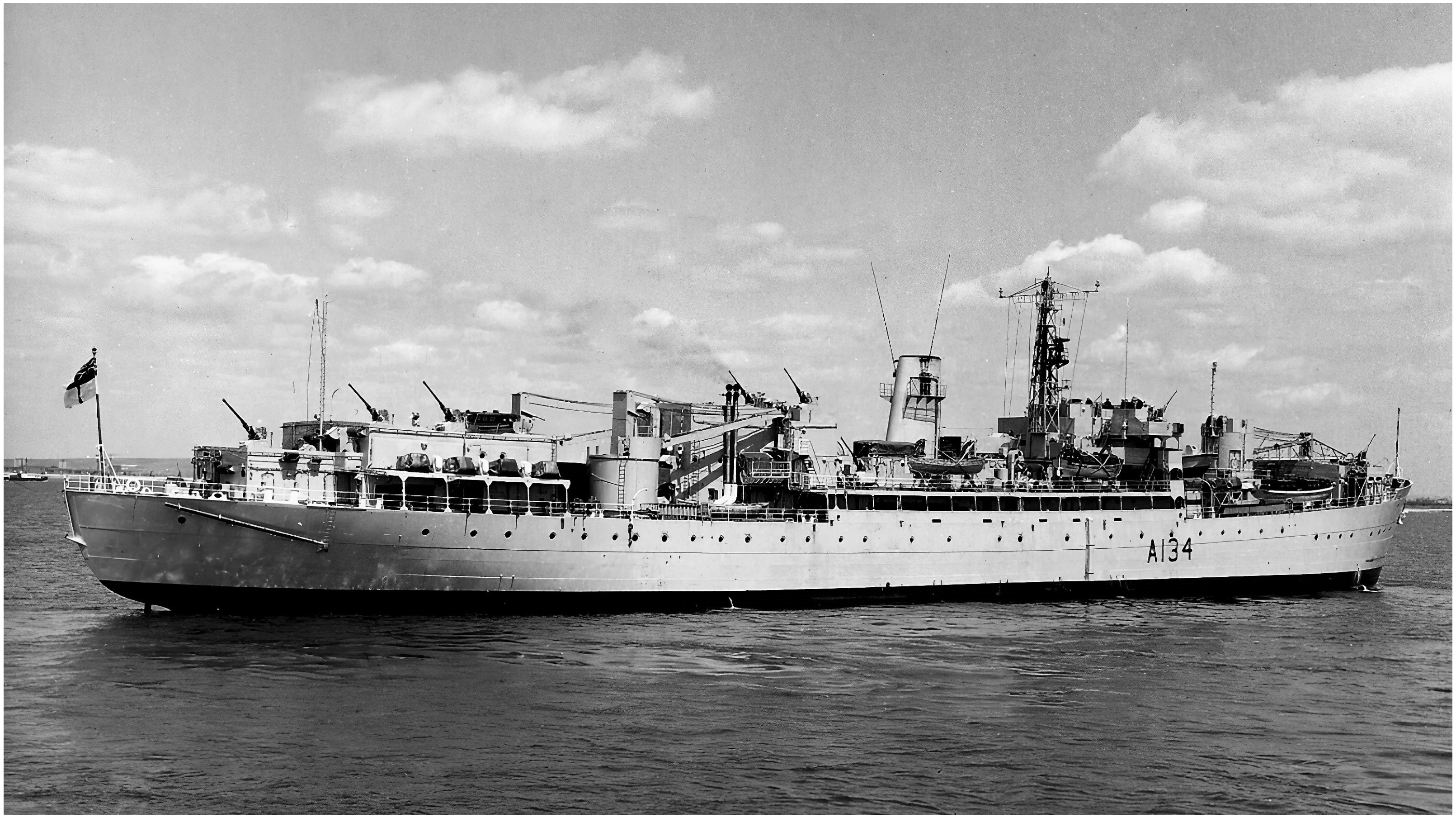
Bermuda was a Fiji-class cruiser ordered from John Brown, Clydebank, on 4 September 1939, the day after war had been declared on Germany. Laid down on 30 November 1939, launched on 11 September 1941, and completed on 21 August 1942, she joined the 10th Cruiser Squadron, Home Fleet, and was sent to cover the North Africa landings. Thereafter she escorted Arctic and North Atlantic convoys, and covered anti-submarine groups in the Bay of Biscay. In 1950–53 she was flagship on the South Atlantic station, and from 1953–54 was in the 1st Cruiser Squadron, based in Malta, before joining the Home Fleet as flagship, Home Flotillas. In 1956 she received limited modernisation, including an enclosed bridge and new directors for her 4-inch guns, as seen here. In 1957–62 she was on Home/Mediterranean general service commissions. She finally paid off at Portsmouth on 30 July 1962, having been the last of her class in commission with the Royal Navy, and was sold for breaking up in 1965.
(Royal Navy Image Archive)

RIGHT • HMS *BELFAST*

The cruiser *Belfast* leaving Singapore on 26 March 1962, flying her paying-off pennant. In 1956–59 she had been modernised at Devonport. There were extensive changes to upgrade living accommodation with bunks, showers, air-conditioning, electric galleys (replacing oil-fired arrangements) and centralised messing. An airtight citadel was created, and a pre-wetting system was installed within the superstructure, for better resistance to nuclear and chemical warfare. Her tripod masts were replaced by lattice masts, there were new radar outfits and gun directors, an enclosed bridge, the replacement of the close-range armament by six twin Bofors mountings, and the removal of her torpedo tubes. Arriving at Singapore in December 1959 *Belfast* spent 27 months on station, with a new crew being flown out from the UK for her recommissioning on 31 January 1961. In February 1963 she entered reserve at Devonport and in 1966 was moved to Portsmouth to join the reserve ships there. In 1971 she became a museum ship in the Pool of London.
(Royal Navy Image Archive)

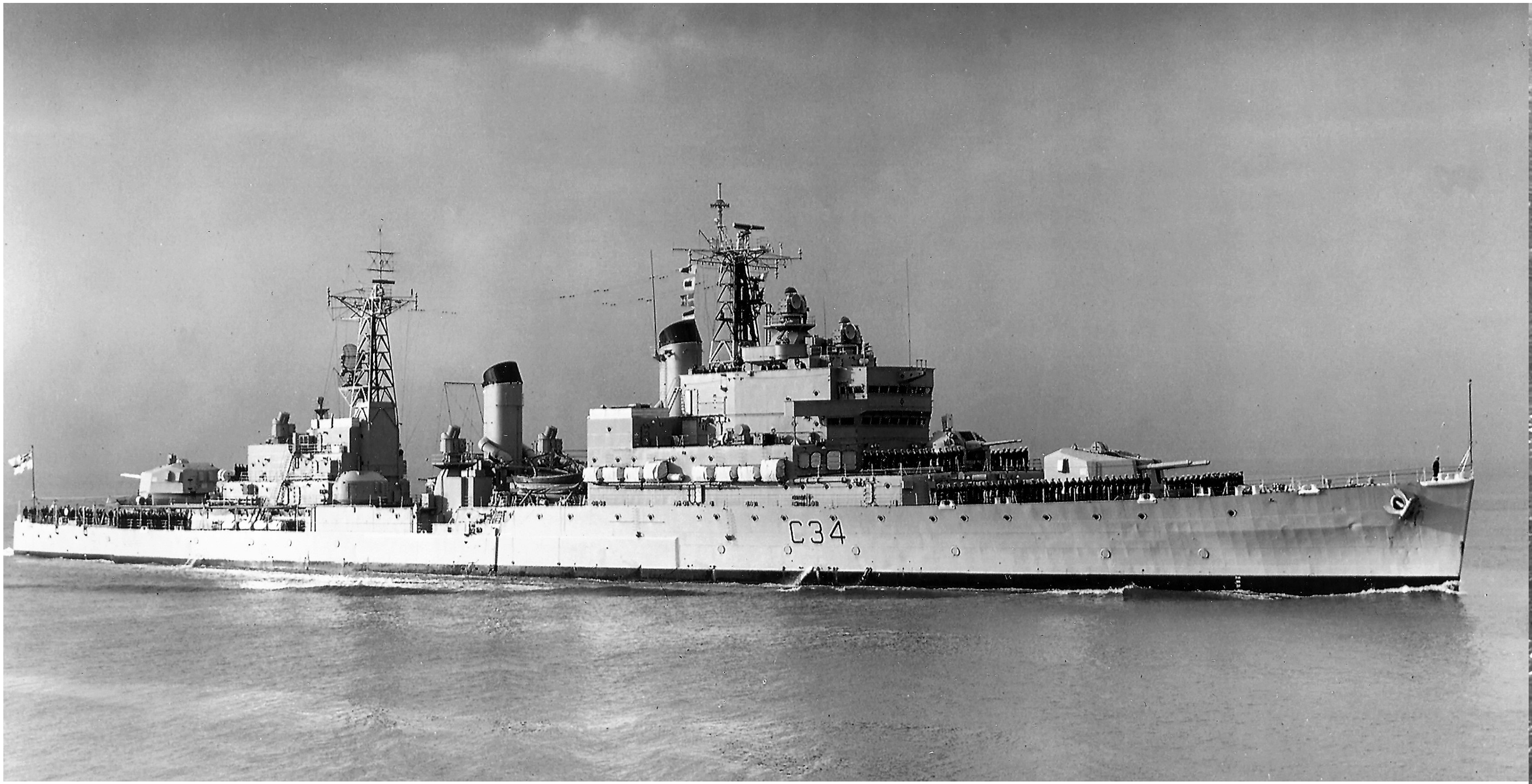
C35

C99
BLAKE



LEFT • HMS *BLAKE*
The Tiger-class cruiser *Blake* was commissioned at Fairfield's Govan yard in March 1961, the last traditional cruiser to be built for any navy. In 1957 consideration had been given to fitting a Seaslug guided missile launcher to the Tigers instead of the aft 6-inch turret. However, this would have affected the supply of launchers to the County-class new-build destroyers, the programme for which would be put back by two years, and the idea was dropped. In this 1962 view *Blake* is firing a broadside from her 6-inch guns. Amidships, one of her twin 3-inch gun turrets can be seen. She saw service in the Mediterranean, North Atlantic and Caribbean during her first commission. After a refit at Devonport and post-refit trials she was placed in reserve in early 1963, because of a shortage of technical ratings, and remained laid up until her conversion into a helicopter cruiser started at Portsmouth in April 1965. She was the first of her class to get this treatment. (Royal Navy Image Archive)

ABOVE • HMS *RAME HEAD*
The escort maintenance ship *Rame Head* seen in 1962 following modernisation. She had been built on a standard wartime Park mercantile hull by North Vancouver Shipbuilding, Vancouver, and completed in August 1945. Until September 1946 she supported units of the British Pacific Fleet. Thereafter she was in a variety of unglamorous harbour roles. From December 1946 until 1960 she was a refit accommodation ship at Sheerness and later Devonport. In 1960–62 she was modernised in Chatham Dockyard. She became a joint headquarters and accommodation ship for reserve ships personnel at Portsmouth, alongside the cruiser *Sheffield*, replacing *Mull of Galloway*. From 1971 she was successively an accommodation ship at Londonderry, Portsmouth and Rosyth. In March 1987 she became a training facility in Portsmouth harbour (with a stint at Portland, 1990–96): the Royal Marines' Special Boat Service used her when training in ship assaults, including close quarters battle drills, ship boarding techniques and underwater demolitions. In 2008 she was sold for breaking up at Ghent. (Author's collection)



ABOVE • HMS *LION*

The Tiger-class cruiser *Lion* was commissioned at Wallsend on 20 July 1960, and is seen here entering Portsmouth harbour. She had been launched in 1944 by Scott's, Greenock, as *Defence*, but work on her was suspended in 1945. In 1955 she was towed to the Tyne to be completed to a revised design by Swan Hunter, and in 1957 was renamed *Lion*. Her first commission included service in the Mediterranean and, as flagship of a special squadron, which also included *Dunkirk, Leopard, Londonderry* and *Wave Prince*, she led a tour of South American ports including Rio, Buenos Aires, Montevideo, Valparaiso, Callao and Cartagena. Thereafter she saw service in the Mediterranean and Far East, as well as home waters. She completed only three commissions and paid off in December 1965 at Devonport to be placed in reserve after only 5½ years' service. Although slated for conversion to a helicopter cruiser this never took place, and she was scrapped in 1975. (Author's collection)

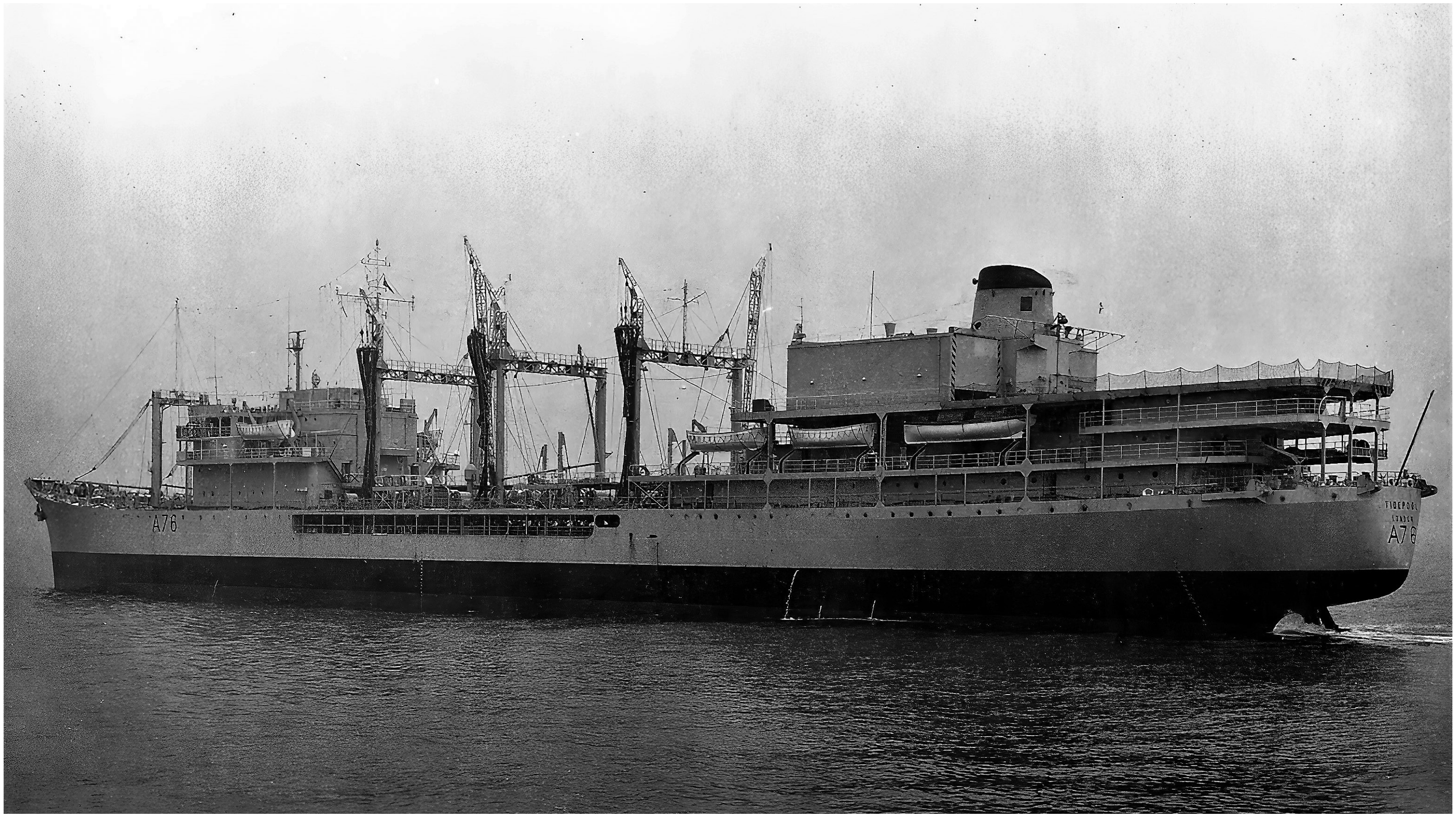
RIGHT • HMS *VICTORIOUS*

Her expensive modernisation had transformed *Victorious* into a very capable aircraft carrier, and she might have been expected to see many years of further service. She could operate all of the contemporary Fleet Air Arm aircraft including Buccaneers, and served in Home and East of Suez waters until 1967. In 1963–65 she was engaged in the Indonesian confrontation operations defending the new state of Malaysia. In June 1967 she entered Portsmouth Dockyard for a refit but on 11 November a fire broke out on the gallery deck, caused by a tea urn which had been left switched on and boiled dry. Although the damage was not serious it gave the government an excuse to decommission the ship, and she was retired from service prematurely, a decision influenced by the proposed run-down of the carrier fleet as Britain withdrew its forces from East of Suez. In this view *Victorious* is seen undergoing replenishment at sea from the oiler RFA *Orangeleaf* when operating East of Suez. (Author's collection)

F122

LEFT • HMS *GURKHA*
Gurkha was a Tribal-class frigate built by John I. Thornycroft, Woolston, and commissioned in February 1963. The Tribals were known as general purpose frigates, having a less extensive anti-submarine outfit than the Rothesays, but better, Type 965, long-range air-search radar. They could carry a Wasp helicopter on a small flight deck aft which folded back to provide an opening through which the Limbo anti-submarine mortar could be fired. They were powered by combined steam and gas turbines, and with *Ashanti* entering service in 1961, pre-dated the County class in this respect. They had all-bunk sleeping and air conditioning. On completion, six of the seven Tribals, including *Gurkha*, replaced Loch-class frigates in the 9th Frigate Squadron on Home/Middle East service, and worked in this capacity throughout the sixties. The squadron's dhow symbol can be seen on *Gurkha*'s forward funnel. Her single 40mm guns on either side of the forward superstructure were later replaced by Seacat missile launchers. (Royal Navy Image Archive)

ABOVE • HMS *URCHIN*
The Type 15 frigate *Urchin* in June 1963, as a member of the Dartmouth Training Squadron (17th Frigate Squadron). For that purpose her bridge had been heightened to create a double level, the upper one being open, and the twin Bofors was removed, in a refit at Devonport before she joined the squadron in 1959. *Venus, Vigilant, Roebuck* and *Wizard* were similarly modified before joining the squadron in 1955, 1956, 1957 and 1960 respectively, as was *Wakeful* when she joined the Portsmouth Squadron as a navigation training ship in 1959. *Urchin* was a U-class destroyer ordered from Vickers-Armstrongs, Barrow, on 12 June 1941 under the 1941 War Emergency Programme and completed on 24 September 1943. Between 1952 and 1954 she was converted into a Type 15 frigate by Barclay Curle, Glasgow, and then served in the 3rd Training Squadron for two years before entering reserve. She was finally decommissioned in August 1964, when Whitby-class frigates were replacing the Type 15s in the Dartmouth Squadron. (© IWM HU 130035)



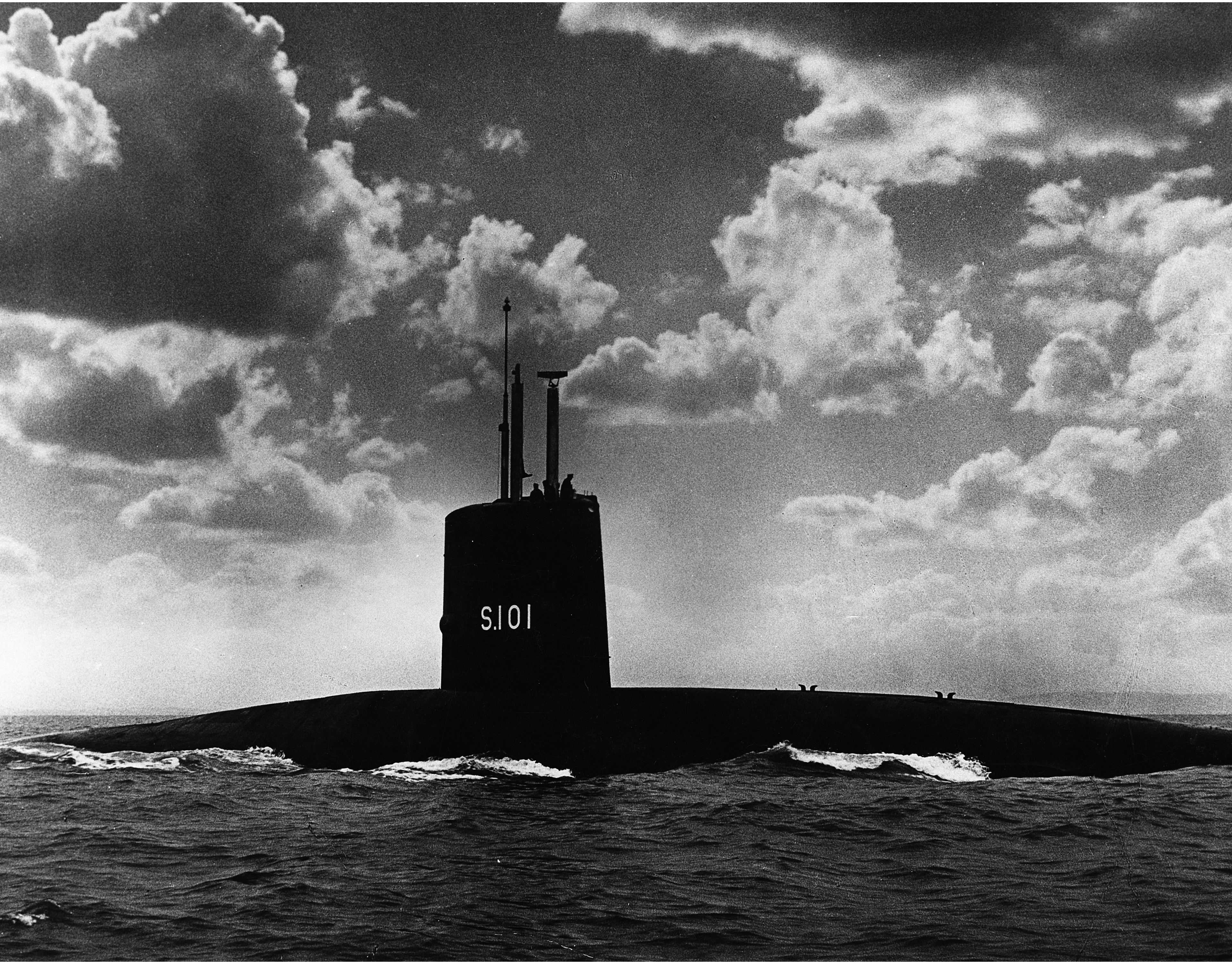
ABOVE • RFA *TIDEPOOL*

RFA *Tidepool* was an Improved Tide-class fast fleet replenishment tanker built by Hawthorn Leslie, Hebburn, and completed in 1963. She had a single-spot flight deck and hangars aft for two Wessex helicopters, and Samson posts supporting replenishment rigs forward and amidships. She supported the Beira patrol in March–June 1966, and the British warships in the two Cod Wars in the seventies. She was en route to Chile with a joint RFA and Chilean crew, having been sold to the Chilean Navy, when the Falklands conflict broke out in April 1982. She was reclaimed by the Royal Navy at Arica, Chile, and for the duration of the conflict had a very active role replenishing ships of the taskforce at sea in the South Atlantic. She was subsequently handed over to the Chilean Navy on 13 August 1982 and renamed *Almirante Jorge Montt*. She was finally withdrawn from Chilean service in 1997. (Author's collection)

RIGHT • HMS *BARROSA*

Barrosa was one of four Later Battle-class destroyers that were converted into radar pickets in the early sixties. The large new lattice mast supported a prominent long-range double Type 965 radar, and she was equipped with a Seacat missile launcher atop the aftermost deckhouse. Her torpedo tubes and the single 4.5-inch gun were landed. She is seen here as a member of the 24th Escort Squadron, serving on a Home/East of Suez commission. *Barrosa* had been converted at Devonport and recommissioned in May 1962. She served East of Suez from September 1962 until June 1966, a period punctuated by a refit in the floating dock in Singapore. She was thus present throughout the Indonesian confrontation and was engaged in anti-infiltration patrols. On 12 February 1963, in the Alice Channel, a boarding party from *Barrosa* stopped a small craft with 13 pirates (who were arms smugglers) aboard and in an exchange of shots an able seaman was fatally wounded, whilst three of the pirates were captured. (Royal Navy Image Archive)

D68
24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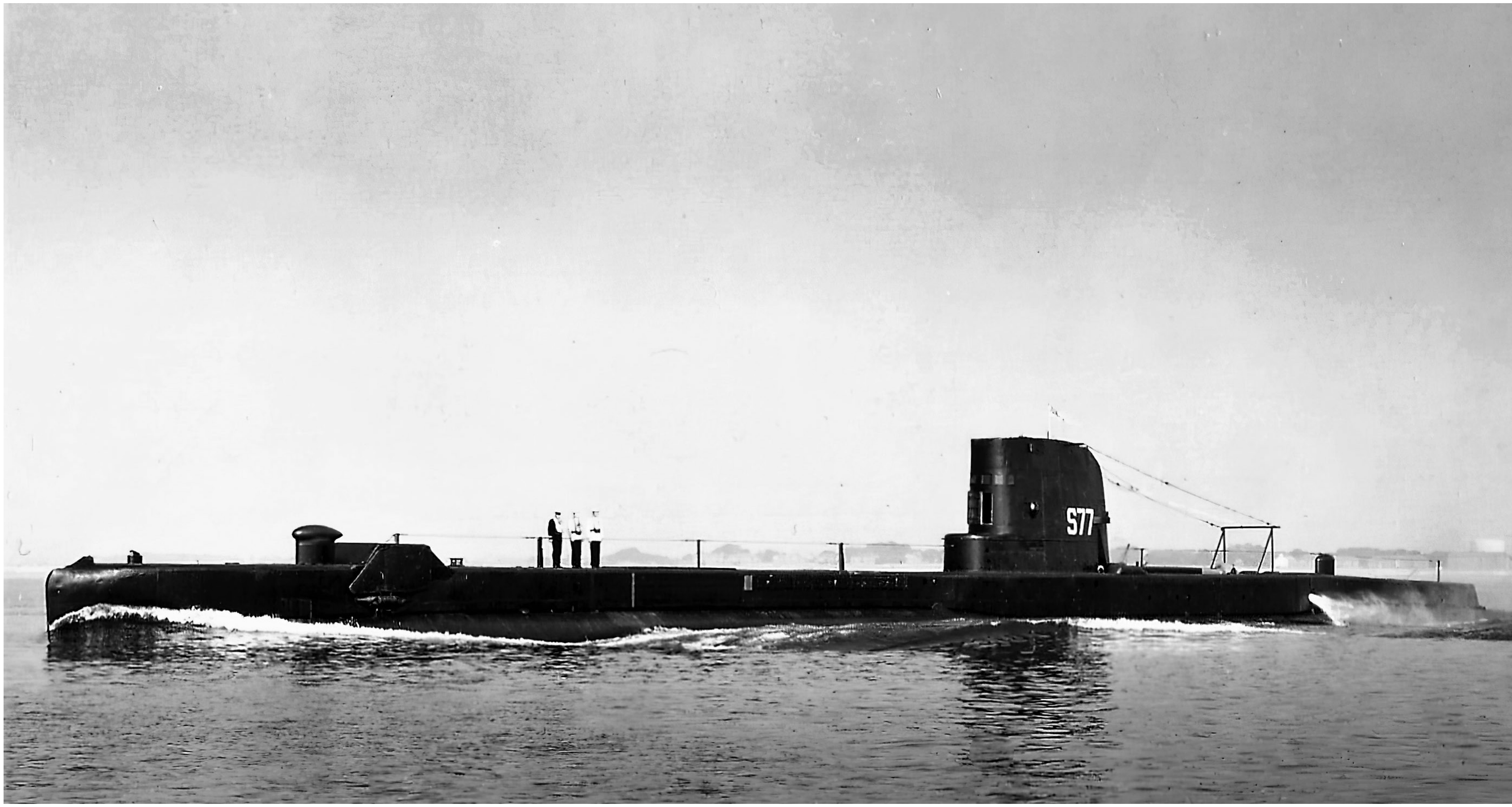

LEFT • HMS *DREADNOUGHT*
Dreadnought was the first British nuclear-powered submarine. She was built by Vickers-Armstrongs, Barrow, and completed on 17 June 1963. Technical information on nuclear submarine design was released to Britain by the USA and, unlike later British boats, *Dreadnought*'s nuclear reactor and propulsion system were procured from the Westinghouse Electric Corporation, Pittsburg. This meant that the after end of *Dreadnought* was identical to USS *Skipjack*. The fore end was of British design and was dominated by the very large sonar equipment, and the bridge fin was further aft than in the US design. She had a submerged speed of 28 knots, a surface speed of 20 knots, and was armed with six 21-inch torpedo tubes. In March 1971 she became the first British submarine to surface at the North Pole. In 1973 she was part of the first task group deployment East of Suez, led by *Tiger*. *Dreadnought* was decommissioned in 1980 after 17 years' service and was laid up at Rosyth pending defueling and dismantling. (Royal Navy Image Archive)

ABOVE • HMS *TIRELESS*
The T-class submarine *Tireless*, seen leaving Gosport in July 1963, was one of five Ts, with riveted hulls, that were modernised in the fifties. The external torpedo tubes (except the stern one) and gun were removed, and the casing was streamlined. A taller, streamlined fin enclosed the periscopes and masts, and the battery was uprated. The increase in submerged speed was a modest 1.4 knots, though they were quieter than before, and were mainly used in anti-submarine warfare training. *Tireless* and her sister ship *Token* were ordered from Portsmouth Dockyard on 6 June 1941 and were laid down in No. 13 Dock on 30 October and 6 November 1941 respectively. They were floated out together on 19 March 1943 but there were delays to fitting out due to other priorities, and *Tireless* was not completed until 18 April 1945. She was modernised in Devonport Dockyard between December 1951 and September 1952, the first of the five to get this treatment. (© NMRN)

LEFT • HMS *CENTAUR*
Centaur embarked Scimitar, Sea Vixen, Gannet AEW and Whirlwind aircraft after recommissioning in March 1961, and deployed to Kuwait in July to deter a threatened Iraqi invasion. Far East and Mediterranean service followed. She suffered a serious steam leak in a boiler room in November 1962, whilst carrying out flying operations in the Irish Sea, and five men were tragically killed. In February 1963 she sailed again for the Far East, and on her return was fitted with a new lattice foremast and Type 965 radar, as seen here. In January 1964 she embarked marine commandos in Aden to carry out a helicopter-borne assault on barracks near Dar-es-Salaam, to obtain the surrender of the 1st Tanganyika Rifles who had mutinied against their British officers. In April her Sea Vixens carried out strikes against rebel tribesmen north of Aden. Later that year she was engaged in anti-infiltration patrols off Malaysia. In September 1965 her operational service ended when she became a victim of defence cuts. (Royal Navy Image Archive)

ABOVE • HMS *CAVENDISH*
The CA class were the last war-built RN destroyers completed in time to see war service, and their postwar service made them the last in the line of classic British fleet destroyers. They were the 11th of 14 fleet destroyer flotillas ordered during World War II to an 'emergency programme' design. They were taken out of reserve and modernised in the mid–late fifties, which included removing one 4.5-inch gun (X mounting) and replacing it with two Squid anti-submarine mortars, fitting the remaining 4.5-inch guns with remote power control, and fitting new Bofors anti-aircraft guns. Five ships were further modernised in the early sixties and fitted for Seacat anti-aircraft missiles. However, three never received missile launchers: one of these, *Cavendish*, is seen as a member of the 21st Escort Squadron, in which she served in the Far East in 1964, carrying out anti-infiltration patrols. Her sister ship *Cavalier* survives at Chatham as a memorial to the 142 British destroyers and over 11,000 men lost at sea during the war. (Royal Navy Image Archive)

M1194

LEFT • HMS *WOOLASTON*
Ton-class minesweepers played a vital part during the Indonesian confrontation, as patrol vessels, with 15 of the class based at Singapore in the 6th and 11th Minesweeper Squadrons by 1965. They landed Royal Marines and other forces for special operations, carried out anti-infiltration patrols around the coasts of Borneo and Malaya, and engaged in gun battles with small Indonesian craft. One midshipman in *Woolaston* was killed when a sampan which had been intercepted blew up alongside the minesweeper, having been booby trapped. The ship is seen here during the confrontation, with a camouflage paint scheme. She was built by Herd & Mackenzie, Buckie, with an enclosed bridge, and completed in 1958. She served in the 104th Minesweeper Squadron for a year at Malta, and then moved with the squadron (renamed the 6th Minesweeper Squadron in 1962) to serve at Singapore from January 1960 until January 1968. She was renamed *Thames*, as a tender to London Division, Royal Naval Reserve, 1969–75, and was decommissioned in November 1975. (Royal Navy Image Archive)

ABOVE • RFA *WAVE SOVEREIGN*
RFA *Wave Sovereign* was one of 20 war-built Wave-class tankers and, like seven of her sister ships, was later modernised for fast fleet replenishment at sea. She is seen at Singapore, with the seaward defence boat *Greatford* (left) and the coastal minesweeper *Chawton* secured on her port side. *Wave Sovereign* had been built by Furness Shipbuilding, Haverton Hill, Stockton-on-Tees, and completed in 1946. In 1950 and 1952–53 she was replenishing ships engaged in the Korean War, earning the battle honour 'Korea 1952–53'. From October 1963 she was again East of Suez, and in 1965 this included replenishing ships engaged in anti-infiltration patrols. Following the end of the Indonesian confrontation she was withdrawn from service in January 1966, and subsequently scrapped in Singapore. *Chawton* was the last of nine Ton-class minesweepers built by Fleetlands Shipyard, Gosport. *Greatford* and a sister boat had been shipped out from the UK to Singapore as deck cargo to meet the need for more patrol craft during the confrontation. (Royal Navy Image Archive)

ABOVE • HMS *ALLIANCE*
In 1965 the A-class submarine *Alliance* tested a new camouflage scheme in the Far East. She had sailed from Gosport on 28 May 1963 and, sailing via the Cape of Good Hope, arrived in Singapore on 10 October to join the 7th Submarine Squadron for two years, at the height of the Indonesian confrontation. Her final commissions were in home waters, based at Gosport and Devonport respectively. On 29 September 1971 she was damaged by a battery explosion at Portland – one chief petty officer lost his life and 14 other ratings were injured. In March 1973 she was decommissioned at Gosport and became a museum exhibit there. Completed by Vickers-Armstrongs, Barrow, in 1947, she was based at Rothesay for 18 months and then at Gosport for seven years. Next, she joined the 6th Submarine Division at Halifax, Nova Scotia 1956–58, helping to train Royal Canadian Navy submariners. After modernisation at Devonport 1958–60 she was based at Faslane and then Devonport before going to the Far East. (© IWM HU 129708)

RIGHT • HMS *KENT*
The third County-class destroyer, *Kent*, was built by Harland & Wolff and commissioned at Belfast on 15 August 1963. Her Seaslug missile armament was supplemented by two quadruple Seacat missile launchers, two twin 4.5-inch guns forward and a Wessex anti-submarine helicopter, which had its own rather inadequate hangar. She is seen with her ship's company manning the decks for a ceremonial sail-past. As a result of a later addition, she has a single 20mm Oerlikon gun on each side of the forward upper superstructure. There were no hammocks in the Counties – all personnel had bunks, whilst both senior and junior rates had large cafeteria-style dining rooms. *Kent*'s first general service commission took her East of Suez. She left Devonport on 15 July 1964 and arrived back in Portsmouth on 17 June 1965. Whilst in the Far East, during the Indonesian confrontation, she was employed in the Strait of Malacca on anti-infiltration patrols. (Royal Navy Image Archive)

D12

A153

LEFT • HMS *AUSONIA*
By far the oldest ship in the fleet in the early sixties was the heavy repair ship *Ausonia*, which had been built as the Cunard passenger liner RMS *Ausonia* by Armstrong Whitworth, Walker-on-Tyne, and launched in 1922. She served on the company's London–Quebec City/Montreal route until World War II, when she was requisitioned as an armed merchant cruiser. In 1942 she was purchased by the Admiralty and converted into a heavy repair ship in Portsmouth Dockyard. In the fifties she was laid up in a state of preservation in the Millwall Docks, London, until undergoing a refit at Devonport in 1957–58. In 1959 she replaced *Ranpura* as the base heavy repair ship at Malta, and by 1962 was also flagship of the Flag Officer, Mediterranean Flotillas, and depot ship for the 5th Submarine Division. On 7 August 1964 she left Malta for the last time and arrived at Portsmouth 11 days later to pay off for disposal. (Royal Navy Image Archive)

ABOVE • HMS *EAGLE*
In 1959–64 *Eagle* was modernised at Devonport, which entailed fitting a fully angled 8½° flight deck, two new steam catapults, a rebuilt island superstructure, Type 984 radar, and six Seacat missile launchers, whilst her four forward 4.5-inch gun turrets were landed, and her deck armour was reduced. Her aircraft now included Buccaneers, Scimitars, Sea Vixens, Wessex and AEW Gannets. After post-refit trials she sailed in December 1964 for four months East of Suez, at a time when the RN maintained two carriers in that area. She started a 12-month Mediterranean and East of Suez deployment in August 1965, including time on the Beira patrol. In August 1967, after a seven-month refit, she sailed for the Far East, and in October covered the withdrawal of British forces from Aden. Pictured in March 1968, she returned to the UK in June. Plans to upgrade *Eagle* to operate Phantom aircraft were cancelled following the decisions to withdraw from East of Suez and run down the carrier fleet, and she was withdrawn in January 1972. (Royal Navy Image Archive)

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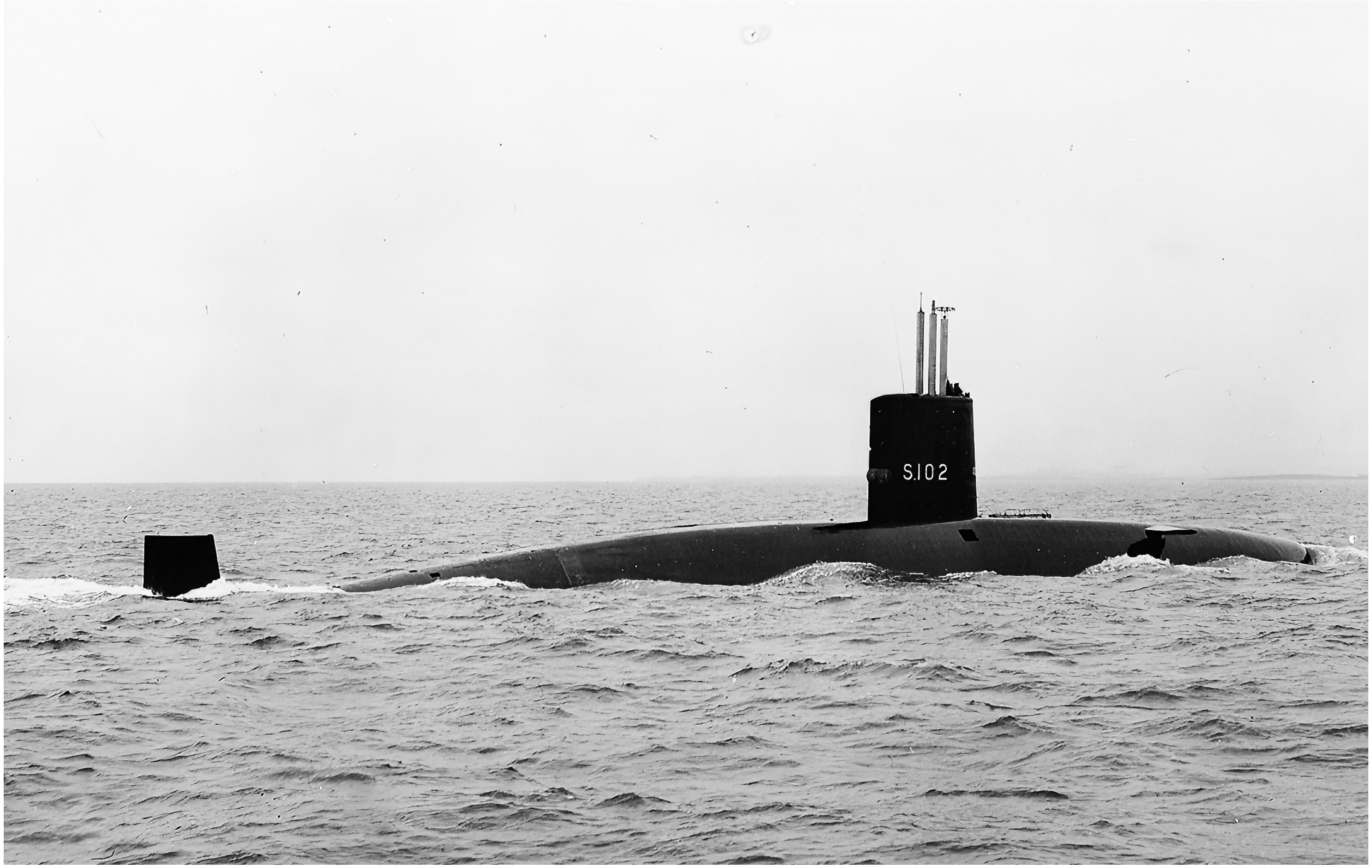
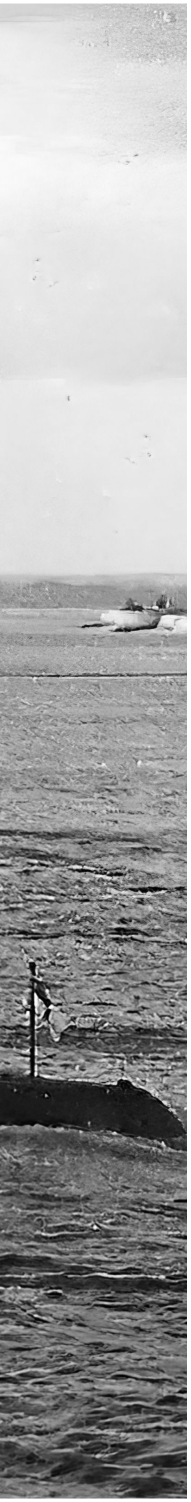


LEFT • HMS *BOSSINGTON*
Following trials with *Shoulton*, 14 Ton-class minesweepers were converted to minehunters, with a sonar dome added to the underside of the hull. *Bossington*, seen here in the Far East, was converted at Chatham Dockyard in 1964–65. She carried divers to investigate possible mines detected by the sonar and to set demolition charges on each mine. In September 1965 she sailed for the Far East and joined the 11th Minesweeper Squadron (later absorbed into the 6th Mine Countermeasures [MCM] Squadron), based at Singapore, and is seen during this service. In September 1969 the 6th MCM Squadron transferred to Hong Kong as the 6th Patrol Craft Squadron. In late 1971 she returned to the UK, and served until 1987. She had been built by John I. Thornycroft, Woolston, and commissioned on 25 July 1958 for service in the Vernon Squadron (later the 5th Minesweeper Squadron), based at Portsmouth, until taken in hand for the minehunter conversion in June 1964. (Royal Navy Image Archive)

ABOVE • HMS *VALIANT*
Valiant was the second British nuclear-powered submarine, and the first to be of all-British design. Her reactor had been designed by Rolls-Royce in collaboration with the UK Atomic Energy Authority, and served the two English Electric steam turbines. There was also a Paxman diesel-electric generator. Built by Vickers-Armstrongs, Barrow, she was commissioned on 18 July 1966, and is seen here two months earlier on builder's trials. She could dive to a depth of 300 metres (984ft) and had a submerged speed of 28 knots. On 25 April 1967 she completed the whole 12,000-mile voyage to Singapore submerged, in 28 days. In 1982 she was sent to the South Atlantic during the Falklands conflict, arriving in the war zone on 17 May. She patrolled off the coast of mainland Argentina for 101 days and transmitted more than 300 early-warning alerts of air raids. *Valiant* was decommissioned on 12 August 1994, after 28 years' service, and laid up at Devonport awaiting disposal. (© IWM HU 130036)

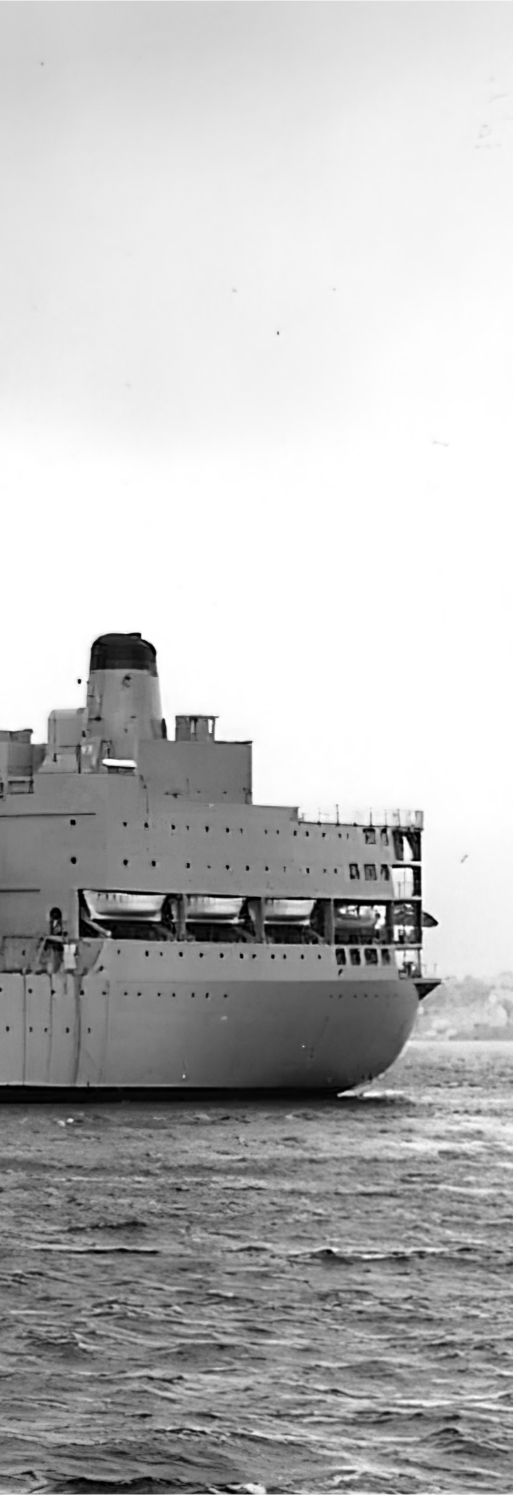
S18

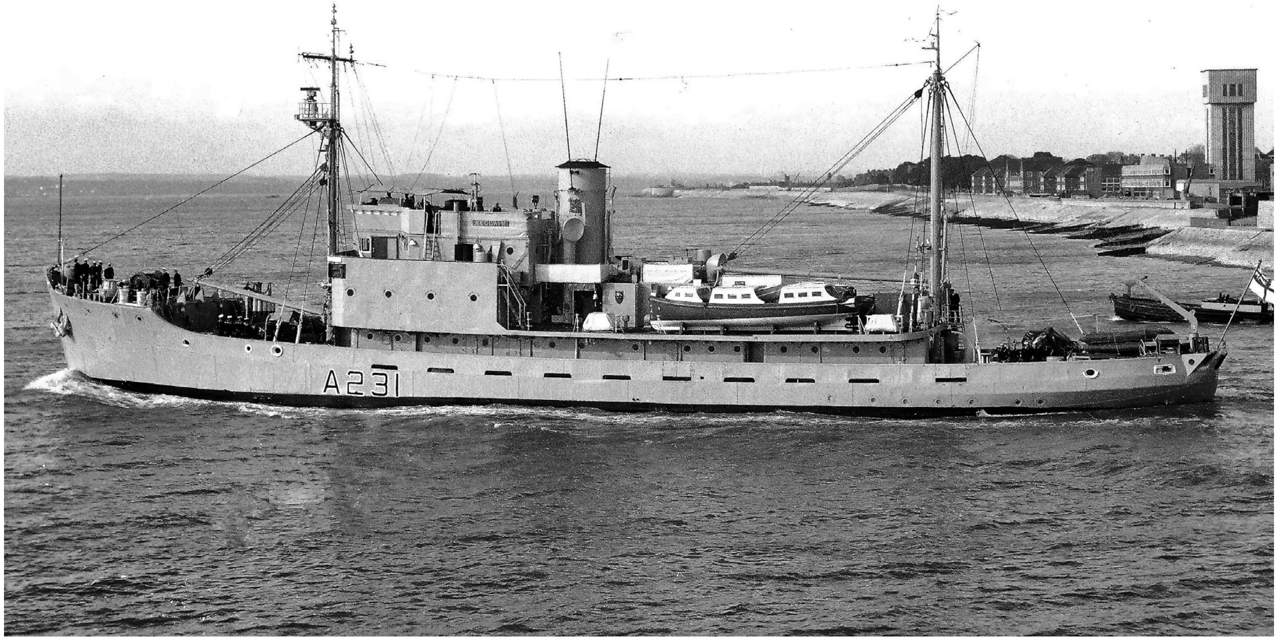


LEFT • HMS *OTUS*
The Oberon-class submarine *Otus* seen leaving Portsmouth harbour in July 1966. The Oberons were an improved version of the Porpoise class, and 13 of them were completed for the Royal Navy in the sixties. They differed from the Porpoise class in having GRP panels as part of the conning tower (or fin) construction, improved steel quality for the pressure hull, and other refinements to the design, which meant that they could dive to depths of at least 800ft. *Otus* was built by Scott's, Greenock, and commissioned for service with the 1st Submarine Squadron, Gosport, on 5 October 1963. Her whole operational life of nearly 28 years was based there as a member of the same squadron. In 1969 she was part of a task group visiting South American ports, and in 1991 was involved in special operations off Kuwait during the First Gulf War, before finally paying off in April of that year. She later became a museum ship at Sassnitz, Germany. (Paul Brown)

ABOVE • HMS *FEARLESS*
In the mid-sixties the LSTs (landing ships tank) and LCTs (landing craft tank) of the Amphibious Warfare Squadron, based in the Persian Gulf, were replaced by two LPDs (landing platform dock), *Fearless* (seen here) and *Intrepid*. Known as assault ships, they were based on a US Navy design, with a well dock aft which could be flooded to float out the four landing craft (LCM, later LCU) via a massive stern gate. Four smaller landing craft, LCVP, were carried in davits and a flight deck accommodated two Wessex helicopters, though there was no hangar. Each ship could carry a full battalion of Royal Marines or Army troops and serve as brigade headquarters. *Fearless* and *Intrepid* were built by Harland & Wolff, Belfast, and the first, *Fearless*, was completed in November 1965. She left Portsmouth in September 1966 for her first deployment East of Suez. In October and November 1967, together with *Intrepid*, she was part of the task force covering the withdrawal from Aden. (© IWM MH 27583)

RESOURCE
A480





LEFT • RFA *RESOURCE*
RFA *Resource* was a fleet replenishment ship with special facilities for storing and handling ammunition, which was carried in addition to limited quantities of other dry stores. She had been built by Scott's, Greenock, completed in May 1967, and is seen on her builder's trials. She was fitted with a single-spot flight deck aft and a hangar for two Wessex helicopters, and served until May 1997. On 31 October 1971 she took part in the final steam-past of 17 ships from the RN, Royal Australian Navy, Royal New Zealand Navy and RFA in the Far East Fleet in the Singapore Straits, after the closure of the naval base there. On 6 April 1982 she sailed from Rosyth to the Falklands, with two Wessex 5s from A Flight 845 NAS embarked, and played an important part in supplying the task force in the South Atlantic through many replenishment at sea operations. She was decommissioned in May 1997 and sold for breaking up in India a month later. (Author's collection)

ABOVE • HMS *RECLAIM*
Reclaim was a deep-diving support ship also employed from 1960 to 1967 as a mine countermeasures vessel support ship. She is seen leaving Portsmouth in 1967 whilst attached to HMS *Lochinvar*, the minesweeper base at Port Edgar. In that year she was relieved of her role as minesweeper support ship by *Abdiel*, and thereafter concentrated on her role as a diving trials ship. *Reclaim* had been completed by William Symonds, Renfrew, in October 1948 and was fitted with sonar, echo-sounders, and a remotely controlled underwater camera for detection and investigation of sunken wrecks, and was equipped for submarine rescue. In June 1951 she and the frigate *Loch Insh* found the submerged wreck of the missing A-class submarine *Affray*, some 30 miles from Alderney at a depth of about 300ft. *Reclaim* was the only RN ship to be present at both the 1953 Coronation and 1977 Silver Jubilee fleet reviews. In 1979 she was paid off, to be replaced later by *Challenger*. (Paul Brown)

F38

LEFT • HMS *ARETHUSA*
The Leander-class frigate *Arethusa*, seen in the Far East, was the 252nd, and last, ship to be built for the Royal Navy by J. Samuel White, Cowes, the first having been launched in 1748. She was also the last ship to be built by White before closure of the yard. Her steam turbines were manufactured by White, and she was completed on 24 November 1965. She has a Seacat anti-air missile launcher aft, rather than the Bofors guns of the earliest Leanders. The well for her variable depth sonar can be seen at her stern. As a member of the 26th Escort Squadron she left Portsmouth on 22 August 1966 for the Far East on a foreign service commission, and transferred to the 2nd Destroyer Squadron there. She returned to Portsmouth 12 months later and was recommissioned on 7 December1967 for a Home/West Indies general service commission in the 8th Frigate Squadron. She received an Ikara missile conversion in Portsmouth Dockyard, 1974–77. (Author's collection)

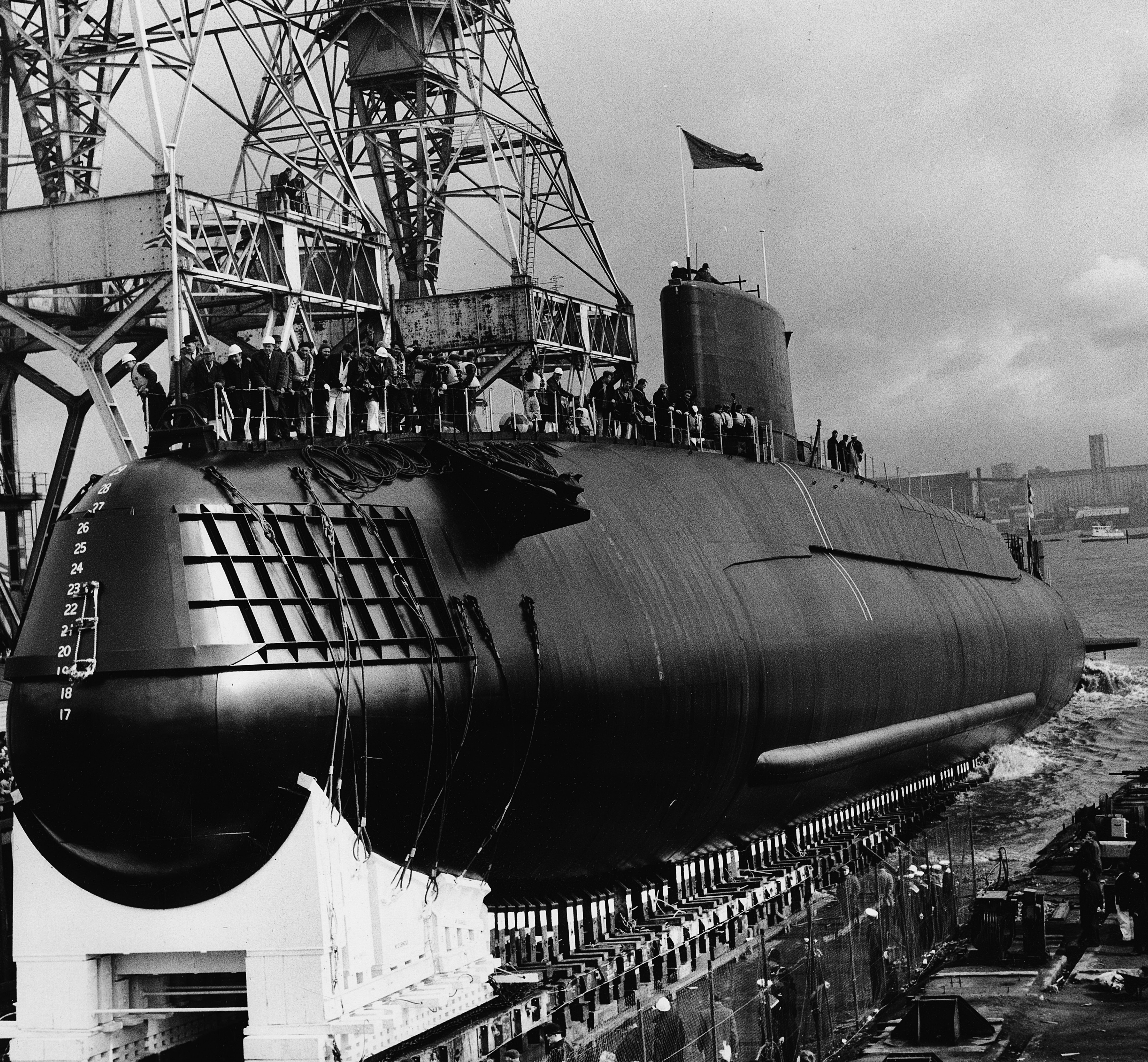
ABOVE • HMS *FIFE*
The fifth County-class destroyer, *Fife*, was a product of Fairfield's Govan yard, and was commissioned on 21 June 1966. She was the first ship in the Navy to carry that name, which, like *Devonshire*, *Hampshire* and *Kent*, was recognition of the county having one of the four home dockyards and naval bases within it. Unlike the four earlier ships of her class, *Fife* had the larger Type 965 radar aerial atop her main mast. Apart from a brief visit to Gibraltar in early December 1966 her first overseas deployment did not start until April 1968. On 6 April she sailed from Portsmouth, whilst simultaneously her sister ship *Glamorgan* left Devonport, both ships heading for the Panama Canal and the Pacific. On 12 June they arrived in Pearl Harbor for a five-day visit, which was followed by passage to Singapore. After serving with the Far East Fleet *Fife* returned via the Panama Canal to Chatham, which she reached on 20 December1968. (Author's collection)

ABOVE • HMS *PLOVER*

Seen entering Portsmouth harbour in September 1967, the coastal minelayer *Plover* was serving with the 1st Mine Countermeasures Squadron, based at Port Edgar, where she had worked as a support ship for the minehunters and as an exercise minelayer, since January 1966. Before that her postwar service was as part of the Vernon Flotilla at Portsmouth, and later the Portsmouth Squadron. By 1967 her frail profile and panting triple expansion engines provided a sharp contrast with the sleek shapes of the new County- and Leander-class ships. She had become an anachronism, and on 4 December1967 she steamed across the Forth to Rosyth to pay off, and was replaced by *Abdiel*. First commissioned in 1937, within six hours of the outbreak of war on 3 September 1939 *Plover* was laying mines south of the Bass Rock. During the war she made 165 sorties and laid over 15,000 mines, often within a few miles of German-occupied Channel ports, as well as off Narvik and the coast of Scotland. (Paul Brown)

RIGHT • HMS *REVENGE*

The launch at Cammell Laird's Birkenhead yard, on 15 March 1968, of the last Resolution-class Polaris submarine, *Revenge*. The naming ceremony was performed by Lady Law, wife of Vice Admiral Sir Horace Law, Controller of the Navy. *Revenge* was to be armed with 16 Polaris A3 missiles, each with three British nuclear warheads, with a range of 2,500 miles. Construction of the two Polaris submarines being built by Cammell Laird (*Revenge* and *Renown*) was much slower than planned, with poor performance by Cammell Laird, and reportedly in particular its workers, to blame. *Revenge* was commissioned on 4 December1969 and served until May 1992. On 8 June 1978 she suffered a major steam burst in the turbo generator room, creating an extremely hazardous situation. Through the bravery and persistence of an engineering rating, crouching below the dense, hot cloud of roaring high-pressure steam, boiler blowdown was initiated and the situation was contained. (Conway Picture Library)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LEFT • HMS *LINCOLN*
Lincoln was the third of four Salisbury-class frigates, all named after cathedral cities. Although ordered from Fairfield, Govan, in 1951, she was not laid down until 1955, launched in 1959, and completed in July 1960. These delays were occasioned by funding problems. She served in the 3rd Frigate Squadron (later the 24th Escort Squadron), based at Singapore, on foreign service commissions, and regularly undertook patrols during the Indonesian confrontation. On 5 May 1966 she arrived at Devonport for a long refit. She is seen after that refit, with a large plated main mast supporting a double Type 965 long-range radar. With *Salisbury*, she was one of two ships in her class to be fitted with Seacat. She recommissioned in May 1968 for Home/East of Suez service. In 1973 and 1976 she patrolled off Iceland in the second and third Cod Wars, her bow being reinforced with wooden baulks for the latter 'war' – to minimise collision damage. She was sold for breaking up in 1983. (Author's collection)

ABOVE • HMS *DEVONSHIRE*
Devonshire, the lead ship of the County-class guided missile destroyers, is seen on 12 September 1968 flying a paying-off pennant, as she arrives at Portsmouth from the Far East to start a major refit. The Counties were innovative in being the first major ships in the RN to designed to carry guided missiles, and were powered by combined steam and gas turbines. They adopted the first-generation Seaslug and Seacat air-defence missiles: the large Seaslug launcher can be seen on *Devonshire*'s stern. She had been built by Cammell Laird and commissioned at Birkenhead on 15 November 1962. Her first commission was mainly spent in home waters, including first-of-class trials, but with spells in the Caribbean, the east coast of the USA and the Mediterranean. Her second commission deployed her to the Far East, leaving Portsmouth on 15 July 1965 and arriving back exactly 12 months later, on 15 July 1966. Her third commission again took her East of Suez, from December 1967 to September 1968. (Paul Brown)

ABOVE • HMS *RENOWN*
Renown was the third Resolution-class Polaris ballistic missile-launching submarine. She was nuclear-powered and built by Cammell Laird at Birkenhead, where she was commissioned on 15 November 1968. She had a submerged speed of 23 knots and a surface speed of 16 knots. The design of the Resolution class incorporated the missile compartment of a USS George Washington-class submarine sandwiched between the bow and stern of a British Valiant class. Each boat had two crews which alternated patrols, so that patrol time could be maximised and the requirement for two Polaris boats to be available at all times could be met. *Renown* collided with the merchant ship *Moyle* in the Irish Sea on 13 October 1969. At the resulting court-martial *Renown*'s commanding officer was found guilty of hazarding his submarine and relieved of command. *Renown* was finally decommissioned on 24 February 1996 and was laid up in Rosyth Dockyard pending defueling and dismantling. (Author's collection)

RIGHT • HMS *DIDO*
The Leander-class frigate *Dido*, as a member of NATO's Standing Force Atlantic, at a NATO fleet review at Spithead in May 1969, which marked the 20th anniversary of the organisation's founding. The Leanders were anti-submarine frigates developed from the Rothesay class, with the same hull but a new superstructure, Type 965 air-search radar, and variable depth sonar. *Dido* had been laid down as the Rothesay-class *Hastings*, but in 1960 was reallocated to the Leander class. The early ships of the class like *Dido*, which was completed by Yarrow in September 1963, had two single 40mm Bofors guns aft rather than the planned Seacat missile launcher. *Dido* was employed on anti-infiltration patrols during the Indonesian confrontation, in 1964–65, when serving in the 21st Escort Squadron. She received an Ikara missile conversion at Devonport 1975–78, but was sold to New Zealand in 1983, having been withdrawn following the 1981 defence review. (Paul Brown)

F104

CHAPTER 3

EASTERN ATLANTIC FOCUS 1970–1979

The seventies was to be the decade in which the retreat from overseas stations was completed and the nation came more-or-less to terms with its reduced place in the world order, albeit retaining its status as a nuclear power with an 'independent' strategic nuclear deterrent, now in the hands of the Navy. However, the Navy also found ways to maintain some global capability through task groups and circumvented the decision to phase out aircraft carriers by ordering 'through-deck cruisers' which could operate vertical short-take-off and landing 'jump jets'. The term through-deck cruiser deliberately obscured the fact that they were light aircraft carriers; the name was changed again in 1974 to become anti-submarine cruiser 'to help get through the 1974 defence review.'[1]

But the Navy continued to get smaller even though defence spending was fairly steady at 5.0–5.3 per cent of GDP in the seventies, despite the defence reviews.[2] The composition of the fleet in 1970 is given in the table on the next page.

The new construction programme in this decade started with the keel of the first Type 42 destroyer, *Sheffield*, being laid down in the first month of the decade. *Bristol*, the sole Type 82 destroyer, was also under construction and the last two County-class destroyers were fitting out. The first Type 21 frigate, *Amazon*, was already on the stocks, her design being unusual in having been conceived by a private sector partnership between Vosper Thornycroft and Yarrow, rather than by the Navy's own naval architects. The last four Leander-class frigates were also under construction, two of them being at the fitting out stage. Four nuclear-powered attack submarines of the Churchill and Swiftsure classes were under construction, including two that were fitting out, and a further two had been ordered. The design of the world's first all-GRP warship, the minehunter *Wilton*, had been finalised, based on the older wooden Ton class, and she was ordered in February 1970. A new class of all-GRP minehunters would be designed to follow her. *Invincible*, the first of the new class of three light aircraft carriers ('through-deck cruisers') was laid down in 1973.

Aircraft carriers	4	Fleet (attack) submarines	3	Inshore survey vessels	5
Commando carriers	2	Conventional (patrol) submarines	27	Patrol vessels	4
Cruisers	4	LST &LCT landing ships	14	Helicopter support ship	1
Assault ships	2	Mine countermeasures vessels	63	Ice patrol ship	1
Destroyers	18	Royal yacht	1	Fast patrol boats	2
Frigates	63	Survey ships	8	Depot & repair ships	9
Polaris submarines	4				

The 1970–71 Navy Estimates allocated £659.4m for expenditure, and the Navy had personnel totalling 89,000, showing a sharp drop from the previous year's 95,500, and reflecting a reduction of 13 per cent in the previous decade. By 1979 personnel numbers had dropped further, to 72,600.[3]

In January 1970 the building of a frigate complex at Devonport Dockyard, which would allow three ships to be refitted in dry dock under cover, was announced. This complex would be used for the modernisation of many of the Leander-class frigates, in an ambitious programme over 12 years, fitting them with new guided missile systems. In March 1977 the frigate *Galatea* became the first ship to enter one of the three flooded docks and the complex was formally opened by Dr David Owen, MP, on 23 September 1977. Also in the seventies, a new submarine refitting complex was built in Devonport Dockyard, centred around two docks, and was officially opened by Prince Charles on 23 May 1980. Work on the first nuclear submarine refit, of *Swiftsure*, had begun there three months earlier.[4]

In 1970 a system of continuous commissions for warships was introduced, with ships remaining in commission from the date of their acceptance from the builders, or on completion of a long refit, until their next long refit or final disposal. Men would not normally serve for more than 30 months in a ship, and ships would not be deployed overseas for more than half that period. The maximum length of an overseas deployment would normally be nine months instead of the previous 12.[5]

On 31 July 1970 the tot of rum for ratings, which had been issued daily at midday, was abolished, in recognition of the fact that giving rum to men operating sophisticated weapons and systems made little sense.[6] The tradition dated back some 240 years. However, rum was still to be available for special occasions when the signal was made to 'Splice the Mainbrace'.

Also in 1970, the new rank of fleet chief petty officer was introduced as the most senior rank of rating, equivalent to the regimental sergeant-major in the army and warrant officer in the RAF.[7] In 1985 the title was changed to warrant officer.

From 1971 four-year engagements would be allowed for all ratings to help ease recruitment difficulties (only 50 per cent of the required number of ratings were recruited in 1970), and ratings under the age of 18 on entry could be released after only three years. The re-engagement rate after nine years' service was only 33 per cent, whilst for those on 12-year engagements it was 59 per cent. To encourage re-engagement, the terms of regular engagements were altered to allow release with 18 months' notice after completion of ten years' service.[8]

The most recent mutiny in the Royal Navy occurred aboard the minesweeper *Iveston* whilst at anchor at Ullapool on 5 July 1970. Five drunken ratings refused duty, staging a sit down outside the wardroom and refusing all orders to move. They sang rebel Irish songs and imitated characters from the film *Mutiny on the Bounty.* One of the ratings assaulted a chief petty officer, who together with a petty officer had urged the men to 'turn in'. The incident lasted four hours before the men were peaceably escorted off the ship by Ross-shire policemen and placed in custody. They were court-martialled at HMS *Cochrane*, Rosyth, on 18 August, found guilty and sentenced to jail terms of between 12 and 21 months, and were dismissed from the service.[9]

Beira patrols continued, but from March 1971 there was only one frigate on patrol. This later changed to a frigate patrolling on

an intermittent basis. On 25 June 1975, the day that Mozambique became independent from Portugal and agreed not to allow the shipment of oil to Rhodesia, the patrol was ended. The frigate *Salisbury* was ordered to discontinue her patrol and withdraw from the Mozambique Channel. Over the nine years of the patrol 76 ships of the Royal Navy had been involved in the patrol and 47 tankers had been stopped, of which 42 were allowed to proceed. The blockade only had limited success since the Royal Navy felt it was unable to stop tankers entering other ports in Mozambique, and was unable to enter Mozambique territorial waters, so tankers would approach Beira through South African and Portuguese territorial waters.[10]

On 1 July 1971 the submarine *Artemis* sank in 9 metres of water alongside the jetty at HMS *Dolphin*, Gosport, after being moved there from dry dock. The embarrassing accident occurred whilst 'first filling' her fuel tanks with salt water prior to refuelling. Because the boat's trim was not adjusted water poured in through the after torpedo hatch, which could not be closed quickly because it had shore supply cables threaded through it. Three men were trapped in a forward compartment for 13 hours before escaping through the forward escape hatch. The boat was raised on 6 July and decommissioned.[11]

On 6 July 1971 the war-built destroyer *Cavalier* beat the frigate *Rapid* in a two-hour speed trial off the east coast of Scotland, covering 74 land miles at an average speed of 31.8 knots. They raced for the title of the fastest ship in the fleet. When new, both were capable of speeds of 37 knots. *Rapid* was built as an R-class emergency wartime destroyer, later converted to a Type 15 frigate, and still had her original steam turbines which were identical to *Cavalier*'s.[12] *Cavalier* narrowly won the race after a safety valve blew in *Rapid*.[13]

The second Cod War started in September 1972 after the Icelandic government again extended its fishing limits, to 50 nautical miles. The British contested the unilateral Icelandic extension, and all western and eastern European states opposed it. Many British and West German trawlers continued fishing within the new zone on the first day of the extension, but on the next day the patrol ship *Aegir* chased 16 trawlers out of the zone.

Iceland's main tactic now was to cut the wires of the trawlers' nets. On 5 September 1972, at 10.25am, *Aegir* encountered an unmarked trawler (actually the *Peter Scott*) fishing northeast of Hornbanki. The master of the trawler refused to divulge the trawler's name and number, and ignored the Coastguard's warnings. *Aegir* closed in and deployed her wire cutter for the first time, slicing one of the trawling wires.

On 7 September the Royal Navy stationed the frigate *Aurora* and RFA *Blue Rover* just outside the disputed zone. Frigates then continued to patrol just outside the zone, but many more wires were cut. On 18 January 1973, the nets of 18 trawlers were cut. The next day chartered ocean-going tugs were organised to go into the zone in their defence, the first being *Statesman*, which arrived on 22 January.

However, the problems persisted, many more wires were cut, and trawlers were fired on. On 17 May 1973 the British trawlers left Icelandic waters, demanding the protection of the Royal Navy. They returned two days later when they were escorted by British frigates in a deployment code-named Operation *Dewey*. Nimrod jets flew over the contested waters and notified British frigates and trawlers of the locations of Icelandic patrol ships. At any given time, four frigates and a number of tugs (under the command of the Royal Navy) protected the British trawling fleet. On 26 May *Aegir* fired shells into the hull of the trawler *Everton*, which started to sink: the frigate *Jupiter* came to her aid and sent over engineers and salvage equipment, saving the vessel.

The Icelandic lighthouse tender *Árvakur* collided with four British vessels on 1 June, and six days later *Aegir* collided with the British frigate *Scylla*. A spate of collisions with British frigates and tugs ensued as the dispute hotted up. On 29 August the Icelandic Coastguard suffered the only fatality of the conflict, when *Aegir* collided with the frigate *Apollo*. An engineer died by electrocution from his welding equipment after sea water flooded the compartment in which he was making hull repairs.

Iceland had threatened to withdraw from NATO, jeopardising the US military presence in Iceland. After a series of talks within NATO and the withdrawal of British warships and tugs on 3 October, an agreement was signed on 8 November. This limited British fishing activities to certain areas inside the

50-mile limit, with an annual catch of 150,000 tons. Over the course of this Cod War, a total of 32 British frigates had entered the contested waters.[14]

The 50-mile zone agreement expired in November 1975, and the third Cod War began after Iceland now extended its fishing limits to 200 nautical miles, and the saga of wire-cutting, rammings and collisions resumed on 21 November. British frigates and chartered tugs and support vessels were once again deployed. On 11 December 1975 *Thor* investigated the ocean-going tug *Lloydsman* and the oil rig supply vessels *Star Aquarius* and *Star Polaris*, which were sheltering from a force nine gale within Iceland's 12-nautical-mile territorial waters. *Thor* collided with *Lloydsman* and then rammed *Star Aquarius*, before veering off and firing shots from close range.

On 7 January 1976, the frigate *Andromeda* was rammed by *Týr*, which sustained a hole in its hull, and the hull of *Andromeda* was dented. The MoD said the collision represented a 'deliberate attack' on the British warship 'without regard for life'. Iceland insisted that *Andromeda* had rammed *Týr* by overtaking the ship and then swiftly changing course. After the incident, with a growing number of ships enduring dockyard repairs, the Royal Navy ordered a more cautious approach in dealing with the 'enemy' cutting the trawlers' warps. It reactivated the frigates *Jaguar* and *Lincoln* from reserve, refitting them with reinforced wooden bows for ramming, but had to accept serious damage to its Cold War frigate fleet, costing millions and disabling part of its NATO North Atlantic force for more than a year. *Yarmouth* and *Eastbourne* were badly damaged, and *Diomede* sustained a 12ft gash in her hull. On the evening of 6 May 1976, after the outcome of the third Cod War had already been decided, *Týr* was trying to cut the nets of the trawler *Carlisle* when the frigate *Falmouth*, at a speed of 22 knots, rammed *Týr*, almost capsizing her. *Týr* did not sink and managed to cut the nets of *Carlisle*, and *Falmouth* rammed her again.

Iceland had threatened closure of the NATO base at Keflavík, which would have severely impaired NATO's ability to deny access to the Atlantic Ocean by the Soviet Union. As a result, the British government agreed to have its fishermen stay outside Iceland's 200-mile exclusion zone without a specific agreement. The third Cod War had seen 55 ramming incidents altogether: 21 frigates had been deployed and 15 of those had been involved in collisions. In NATO-mediated sessions, an agreement was reached between Iceland and the UK on 1 June 1976. The British were allowed to keep 24 trawlers within the 200-nautical-mile zone and an annual fish total of 30,000 tons.[15]

In the Far East, the bulk of British forces left Singapore on 31 October 1971, following a ceremonial sail-past and flypast in Singapore Straits the previous day. Some 20 warships and RFAs, including the carriers *Eagle* and *Albion* and the guided missile destroyer *Glamorgan*, were involved. HMS *Simbang* at Singapore, the Fleet Air Arm's last overseas air station, closed on 30 September.[16] In October 1971 the remaining ships were withdrawn from the Persian Gulf. A squadron of five patrol ships and the frigate *Chichester* continued to be maintained at Hong Kong, although the frigate was withdrawn in 1976.

To compensate for its withdrawal from East of Suez and South Atlantic, the Navy introduced the concept of task group deployments. A number of warships and supporting RFAs would deploy out of the NATO area to visit politically sensitive and strategically important areas and conduct exercises with allied navies in the region visited. This would be an enduring model for out-of-area deployments over several decades. The first group sailed from the UK in June 1973, under the command of the Flag Officer, Second Flotilla, in the cruiser *Tiger*, accompanied by the frigates *Hermione*, *Dido* and *Rhyl* and two RFAs. The submarine *Dreadnought* accompanied the group for part of the deployment, which took the ships via Cape Town to the Far East, including Singapore, Guam, the Indian Ocean and back via Simonstown.[17]

The 1974 Defence Review announced a reduction in defence expenditure from 5.5 per cent of GDP to 4.5 per cent over ten years, to help address the UK's economic problems. Plans to order two new assault ships to replace *Fearless* and *Intrepid* were dropped, and only one of the two assault ships would be in service at any one time. The two commando carriers would be withdrawn, with *Bulwark* to be paid off in 1976 and *Hermes* to be converted to an anti-submarine helicopter carrier (though

retaining some commando role). The numbers of destroyers, frigates and mine countermeasures vessels would be cut by 15 per cent and the number of conventional submarines by about 25 per cent, these reductions being achieved by premature retirement of ships and cuts to the new construction programme. The forward programme for new destroyer and frigate construction would be cut by nine ships, including two Type 42 destroyers which were to have been ordered in 1975–76. A commensurate reduction in the number of afloat support ships would be made.[18]

The main focus of the Navy would be on its NATO obligations in the Eastern Atlantic and the Channel. The commitment made to NATO to station warships in the Mediterranean would be discontinued, as would the permanent stationing of two frigates in the West Indies. Periodic deployments would be made from the Eastern Atlantic to the West Indies. In the Far East, the Hong Kong guardship *Chichester*, and a submarine serving alongside the Royal Australian Navy, would be withdrawn. The periodic task group deployments East of Suez would be less frequent. Personnel numbers would reduce by 6 per cent, to 74,000 by 1979.[19]

On 10 August 1976 the ocean-going tug *Reward*, at that time manned by the Royal Navy as a patrol vessel in the Fishery Protection Squadron, sank after colliding in thick fog with the German-owned, Singaporean-registered merchant ship *Plainsman* in the Forth estuary and was a total loss. Fortunately, all 42 members of the ship's company were rescued by the *Plainsman*, and there were no injuries.[20] *Reward* was subsequently raised and scrapped.

The loss of a Royal Navy ship during peacetime was extremely rare, yet only six weeks later another was lost. On 20 September the minesweeper *Fittleton*, manned by a Royal Naval Reserve crew, sank off Den Helder after being in collision with the frigate *Mermaid* en route to Hamburg, following exercises with other RNR ships in the North Sea. The minesweeper was manoeuvring close to the side of *Mermaid* to conduct a mail transfer by a heaving line. She was sucked into the side of the frigate and bounced off, and then, having moved forward in an attempt to extricate herself from the situation, was struck by the bow of *Mermaid*. She rolled over through 180 degrees and her upturned hull remained afloat for six hours before sinking. Tragically, 12 lives were lost in *Fittleton*. The ship became a total loss: after being raised she was sold for scrapping.[21]

To mark the Silver Jubilee in 1977 a fleet review was held at Spithead on 28 June. It could not match the spectacle of the Coronation Review, but the Royal Navy still had a sizeable contingent of ships present. The queen was aboard the royal yacht *Britannia* as, in rather chilly and blustery weather, it left Portsmouth harbour to the sound of a 21-gun salute fired by seven warships and then proceeded at eight knots through the lines of warships, RFAs, RMAS[22] vessels and assorted merchant ships, fishing vessels and yachts. *Britannia* was followed by the new destroyer *Birmingham* which was acting as Admiralty yacht. The fleet was headed by the aircraft carrier *Ark Royal*, flagship of the Commander-in-Chief Fleet, Sir Henry Leach, which was accompanied in the carriers and amphibious ships group by *Hermes* and *Fearless.* The flagship of the First Flotilla (based at Portsmouth), the guided missile destroyer *London*, was accompanied by her sister ships *Antrim* and *Devonshire*, the cruiser *Blake* and the 16 frigates and one Type 42 destroyer of the 1st, 2nd, 5th and 6th Frigate Squadrons. The flagship of the Second Flotilla (based at Devonport) was the cruiser *Tiger*, which was accompanied by the guided missile destroyers *Glamorgan, Fife*, and *Kent*, plus 15 frigates and one Type 42 destroyer of the 3rd, 4th, 7th and 8th Frigate Squadrons.

The Submarine Flotilla was represented by four nuclear-powered attack submarines – *Superb*, *Valiant*, *Churchill* and *Dreadnought* – and ten conventional submarines. Two other frigates, one diving support ship, 23 mine countermeasures vessels, three fast training boats, one patrol ship, 11 survey ships, the Hovercraft Trials Unit, and nine RFAs completed the Royal Navy line-up. Amongst the Commonwealth and foreign warships present were the Australian aircraft carrier *Melbourne* and the US nuclear-powered cruiser *California*. The review was followed by a Fleet Air Arm flypast which was planned to consist of Phantom, Buccaneer, Hunter, Canberra and Gannet aircraft and Sea King, Wessex, Lynx, Wasp and Gazelle helicopters. Because of poor visibility the number of aircraft taking part was reduced. Crowds on Southsea beach were clad to endure the cold and wet and

appreciated the few brief occasions when the sun shone. The fleet was illuminated that evening and there was a firework display on Southsea Common. The queen, her consort and other members of her family were treated to a slap-up dinner that evening aboard *Ark Royal*. On the previous evening 193 Royal Navy ratings and 31 ratings from Commonwealth warships had attended a reception aboard *Britannia*.[23]

On 14 February 1979 *Ark Royal* paid off at Devonport, leaving the Navy with no fixed-wing aircraft at sea until *Invincible* and *Hermes* embarked Sea Harriers in 1981. It was decided that the name *Ark Royal* should be perpetuated on the third Invincible-class aircraft carrier, which was originally to be called *Indomitable*. *Bulwark* had been brought forward from reserve to serve as a second anti-submarine helicopter carrier from 1979 to 1981, due to delays to the completion of *Invincible*.

On 1 April 1979 the last British forces finally left Malta[24] as the destroyer *London* sailed away, ending 178 years of Royal Navy presence on the island.[25] After passing the breakwater arms, *London* hove to outside the harbour and fired a 21-gun salute, while RAF Luqa's solitary Nimrod flew low, dipping its wings in farewell.[26]

Due to manpower shortages (of 2,200 ratings and 300 officers) the cruiser *Blake* and five Tribal-class frigates were reduced to reserve, in the Standby Squadron at Chatham, starting with *Nubian* in September 1979, with the others following over the next 11 months. The cruiser *Tiger* and assault ship *Fearless* had to be put in 'high degree reserve', and many ships were subject to arbitrary cuts of 10 per cent in their crew's size.[27]

Pay rises averaging 24.2 per cent were implemented in April 1979 and it was hoped that this would stem the recruitment and re-engagement problems, the retention of skilled personnel being a particularly acute issue. Amongst officers there were shortages of seamen, engineers and instructors. The shortage of seaman officers had meant that, for the first time in many years, senior lieutenants and junior lieutenant commanders had been appointed as first lieutenants in frigates. For ratings the most acute shortages included artificers, medical assistants and aircraft mechanics. The Armed Forces Pay Review Body had found that an increase of 32.5 per cent would be needed to give comparability with civilian occupations, but the government required this to be achieved in two stages, the second being in April 1980.[28]

In April 1979 it was announced that the strength of the Royal Naval Reserve was to be increased from 5,500 to 6,500. Furthermore, 12 new minesweepers would be built and would be RNR manned, reversing the cuts of the mid-seventies when the number of RNR minesweepers was reduced from 11 to six.[29]

LEFT • HMS *RESOLUTION*
The strategic submarine *Resolution* was the name ship of a class of four Polaris missile-armed boats, and is seen at speed near Helensburgh, in the Firth of Clyde, in March 1970. Built remarkably quickly, by Vickers-Armstrongs, Barrow, she was ordered in May 1963, laid down in February 1964, and commissioned in October 1967. She operated with two crews, which changed places after each patrol. Typically, the boats conducted 60-day patrols, with a five-to-seven-week period between them. Refits were at Rosyth and took about 20 months, every five years. One submarine was always refitting, and one (or occasionally two) on patrol. When only one was on patrol another was at 48 hours' notice whenever possible. *Resolution* was decommissioned on 22 October 1994 after 69 patrols and laid up at Rosyth. Dismantling her began 15 years late, in 2016.
(Conway Picture Library)

ABOVE • HMS *BLAKE*
The Tiger-class cruisers were anachronisms in the guided missile age, with the County-class destroyers soon replacing their role in the fleet. Two were converted to carry four Wessex anti-submarine helicopters. *Blake* ran sea trials in December 1968 after her conversion in Portsmouth Dockyard, but a fire on board delayed her recommissioning for Home and East of Suez service until 23 April 1969. The picture shows her with the new hangar and flight deck aft. The midships 3-inch turrets have been replaced by Seacat missile launchers, but the forward 6-inch and 3-inch gun turrets have been retained. Frequently employed as a flagship, *Blake* was deployed East of Suez in 1970 and led a task group there in 1974–75. In 1978 she led a task group to the Pacific seaboard of North America. (Author's collection)

F84

LEFT • HMS *EXMOUTH*
The Blackwood-class frigate *Exmouth* is seen after conversion to gas turbine propulsion in Chatham Dockyard between April 1966 and July 1968. She was fitted with one Rolls-Royce Olympus gas turbine – used alone for full speed work – and two Rolls-Royce Proteus gas turbines for slower speed cruising, and served as a trials ship for all-gas-turbine propulsion. The gas turbines drove her single screw through a common gearbox, her top speed being 28 knots. She had been built by J. Samuel White, Cowes, and completed on 20 December1957. Her early service was as a submarine target ship with the 3rd Submarine Squadron, Faslane. In February 1964 she joined the Fishery Protection Squadron. Her gas turbine propulsion trials were mainly in the Mediterranean, and on completion of these she joined the 2nd Frigate Squadron at Portland. In early 1976 she undertook Cod War patrols and shortly afterwards stood by to evacuate British nationals from Lebanon. (Courtesy of Michael Pocock, Maritime Quest)

ABOVE • HM Ships *CUTLASS, SCIMITAR* and *SABRE*
Cutlass (foreground), *Scimitar* (middle) and *Sabre* were Scimitar-class fast training boats based at Portland to exercise the fleet in tactics against fast surface targets. They were first commissioned in 1970–71 and had been built by Vosper Thornycroft's Portchester shipyard to a design developed from the Brave-class fast patrol boats. As such they were the final boats in the evolution of fast coastal forces, but were unarmed (though the design allowed for armament to be fitted if needed). They were powered by two Rolls-Royce Proteus gas turbines giving them a top speed of 40 knots, supplemented by two Foden diesel engines for cruising. There was space for a third Proteus engine to be fitted should the need arise. In 1979 *Scimitar* was shipped to Hong Kong for anti-immigration patrols and was armed with two machine guns. She returned to the UK in 1981, and in that year all three boats were withdrawn from service. (Author's collection)

A171

LEFT • HMS *ENDURANCE*
The ice patrol ship *Endurance* had in 1968 replaced the veteran *Protector* in that role. *Endurance* had been purchased in 1967 from J. Lauritzen, Copenhagen, and converted for her new role by Harland & Wolff, Belfast. She had been built by Kröger Werft, Schacht-Audorf, Germany, as *Anita Dan*, and launched in 1956. In RN service she retained her red hull (with a buff-coloured funnel) and served each southern summer season in Antarctica and high southern latitudes. She was scheduled to be withdrawn in April 1982 as part of the 1981 Defence Review cuts, but was reprieved because of the Falklands conflict, and played an important role in the recapture of South Georgia. On 6 February 1989 *Endurance* struck an iceberg while manoeuvring at low speed in very confined waters near Cape Scrymgeour in Antarctica, and suffered damage below the waterline. Although repaired, in 1991 her hull was deemed not sound enough for a return to Antarctica, so she was finally decommissioned. (© IWM MH 27511)

BELOW • RFA *STROMNESS*
Stromness was a stores ship designed for replenishment at sea of aircraft carriers, and was completed by Swan Hunter, Wallsend, in March 1967. One of three ships of the Ness class, replacing war-built Fort-class ships, they carried quantities of up to 40,000 different items of general naval stores, including stocks of clothing, mess gear and medical supplies, together with dry and refrigerated food and up to 350 tons of drinking water. In June–July1970 *Stromness* was involved in the operation which attempted to salvage the stricken RFA tanker *Ennerdale* in the Indian Ocean. In February 1982 *Stromness* was withdrawn from service as part of the 1981 Defence Review cuts, prior to sale to the United States Military Sealift Command. But with the Falklands conflict erupting in April 1982, she was given a temporary reprieve and sent to the South Atlantic as a troop transport. She was in San Carlos Water to disembark Royal Marines of 45 Commando on the first two days of the landings. (Mike Welfare)

F43
TORQUAY

LEFT • HMS *TORQUAY*
Saluting the royal yacht, the Whitby-class frigate *Torquay* passes *Britannia*. Between 1972 and 1985 *Torquay* served as a navigational training ship based at Portsmouth. In 1971 she had been refitted with a solid foremast, and a large navigational training room was erected aft, where the forward set of Limbo mortars was previously located. She was also fitted for trials of CAAIS – the computer-assisted action information system. She was replaced as navigational training ship by *Juno* in 1985. Originally built by Harland & Wolff, Belfast, *Torquay* was completed in May 1956 and became leader of the 5th Frigate Squadron on Home/Mediterranean service. Between 1962 and 1971 she was part of the Dartmouth Training Squadron, which by 1964 consisted of *Torquay*, *Tenby*, *Eastbourne* and *Scarborough*, all Whitbys, replacing Type 15 frigates. From September to December 1964 the four ships were sent to the Mediterranean to relieve the 30th Escort Squadron, which had been sent to the Far East because of the Indonesian confrontation. (Author's collection)

ABOVE • HMS *BRISTOL*
Bristol, the prototype Type 82 destroyer, was built by Swan Hunter, Wallsend, entering service on 15 December1972. The class was not extended because the new aircraft carriers it was designed to defend were cancelled. *Bristol* was trials ship for the new Sea Dart air defence missile system (as photographed) and was also fitted with Ikara, a long-range anti-submarine missile system which delivered homing torpedoes to a position where they could attack submarine targets. Powered by combined steam and gas turbines, she was badly damaged by fire in the steam turbine room whilst alongside in Newport in autumn 1973, and for three years operated on gas turbines alone. After the weapons trial period with Sea Dart, Ikara and Type 988 radar, her first operational commission began in 1980 as flagship of the 3rd Flotilla. In 1982 she led the first reinforcement group to the Falklands, joining the carrier battle group in the early hours of 26 May. Her sea-going service ended in 1991. (© IWM MH 27568)

F126

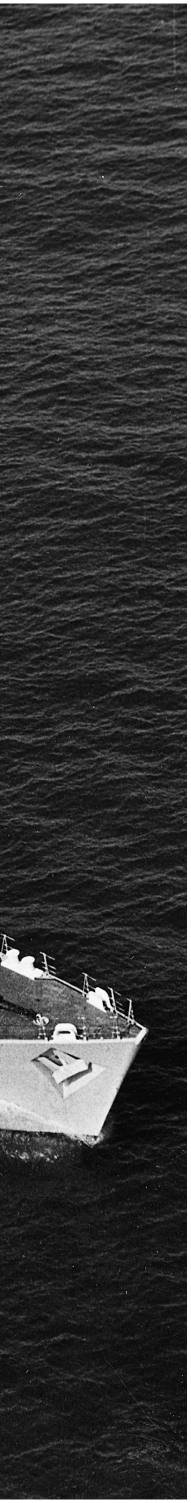
LEFT • HMS *PLYMOUTH*
In the late sixties the nine Rothesay-class frigates were modernised, which involved landing one of the two Limbo anti-submarine mortars, constructing a flight deck and hangar for a Wasp helicopter, and replacing the 40mm Bofors gun with a Seacat missile launcher, which sat above the hangar. *Plymouth* is seen here in this form. Built in Devonport Dockyard and completed in May 1961, she was on Home/East of Suez service, before modernisation at Chatham from August 1966 to February 1969. In the seventies she served in the 6th Frigate Squadron and was deployed to the West Indies for six months in 1972–73 and, as part of a task group, to the Far East from July 1975 to April 1976. During the Falklands conflict she was engaged in the retaking of South Georgia, the protection of the San Carlos landings, and naval gunfire support of land operations. Paid off in 1988, she became a museum ship until 2006 and was broken up in 2014.
(Crown Copyright/OGL)

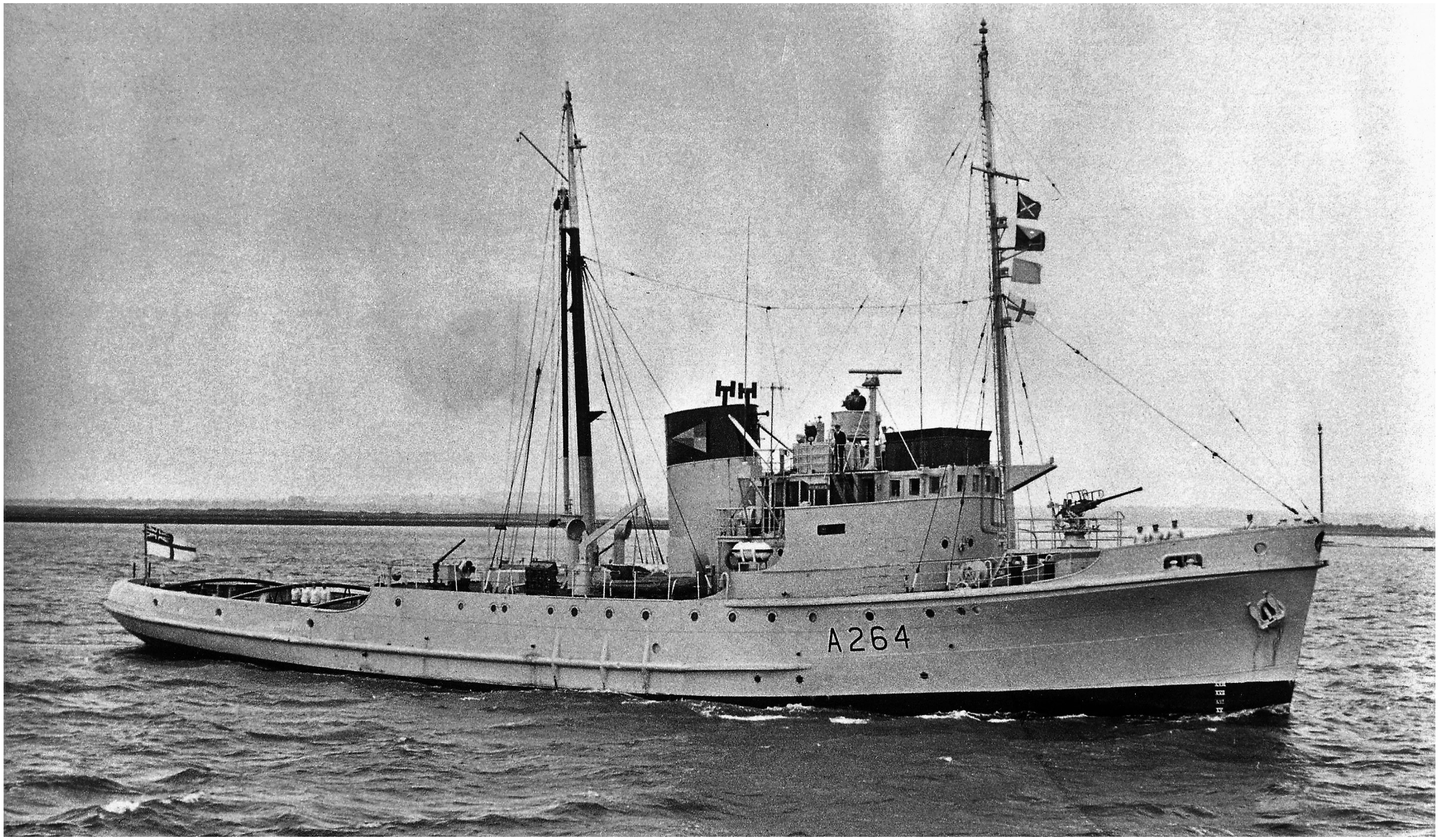
ABOVE • HMS *YARNTON*
The ubiquitous Ton-class minesweeper was to assume a variety of roles over its 40-year service. In 1971 five ships were given a limited conversion to patrol vessels at Hong Kong, where they performed a guarding and policing role for the colony. Seen here in March 1974 is *Yarnton*, shorn of her minesweeping gear, with a patrol vessel pennant number, enclosed bridge, lattice mast, and two 40mm guns. She had been completed by William Pickersgill & Sons, Sunderland, in 1957, and joined the 100th Minesweeper Squadron at Portsmouth, transferring with the squadron (later the 2nd Minesweeper Squadron) to Port Edgar in 1959. From 1966 to 1971 she was in the 9th Mine Countermeasures Squadron at Bahrain. This squadron was disbanded in August 1971 and in the following month *Yarnton* joined the 6th Patrol Craft Squadron at Hong Kong, which replaced the 6th Mine Countermeasures Squadron there. She received a fuller conversion to patrol vessel at Hong Kong in 1973 and finally paid off in 1984. (© IWM HU 130054)

ABOVE • HMS *MERMAID*
Mermaid was a one-off frigate which spent four years in Royal Navy service. She was built by Yarrow, Scotstoun, for the Ghanaian Navy but was never paid for or delivered, due to a coup in the country. She was diesel-powered and developed from the Leopard class. Launched on 29 December1966 her fate was unclear, until in 1972 she was purchased by the RN, commissioned on 16 May 1973 as *Mermaid*, and deployed to the Far East. She relieved the frigate *Chichester* as guardship for Hong Kong at times, and stood by at the end of the Vietnam war in case British nationals needed evacuation from Saigon. Returning to the UK she saw service in the third Cod War, including two collisions with Icelandic gunboats. On 20 September 1976 she collided with and sank the minesweeper *Fittleton* off Den Helder. Tragically, 12 lives were lost in *Fittleton*. *Mermaid* was unsuitable for the Navy's primary NATO roles and was sold to the Royal Malaysian Navy in 1977. (Author's collection)

ABOVE • HMS *ANTRIM*
The County-class guided missile destroyer *Antrim* was one of four Counties refitted with an Exocet missile system, the launcher being in place of the twin 4.5-inch gun in 'B' position, as seen here. A piper of the ship's affiliated regiment, the Royal Irish Rangers, is playing on top of the gun turret. She was a product of Upper Clyde Shipbuilders, Govan, and was accepted into service in November 1970. She was deployed East of Suez for nine months in 1972–73. Her Exocet conversion was in Portsmouth Dockyard, November 1973 to September 1974. *Antrim* had an eventful Falklands War in April–June 1982: she led the task group which liberated South Georgia from Argentine forces, capturing the Argentinian submarine *Santa Fe*, and was employed on close protection of the amphibious landings in San Carlos Water, sustaining damage when a bomb, which failed to explode, entered her hull and lodged itself close to the Seaslug magazine. It took ten hours to defuse and remove it. (Author's collection)

D80





LEFT • HMS *SHEFFIELD*
Sheffield (photographed in April 1975) was the first of class of the Type 42 Sheffield-class destroyers. Ordered in November 1968, and laid down by Vickers (Shipbuilding) Ltd at Barrow-in-Furness on 15 January 1970, she was launched by the queen on 10 June 1971. She commissioned on 28 February 1975, and undertook first-of-class trials until 1976. Intended to provide area defence for a task force, the design of the Type 42 was heavily influenced by cost constraints. The length was limited to 392ft, with too short a run-in from the bow to the point where the full width of the hull was needed to accommodate the missile magazine. Consequently, the ships were very wet forward, which affected the maintainability of the Sea Dart missile launcher and 4.5in. gun, something that was to cause problems for *Sheffield*'s sister ship *Coventry* in the Falklands campaign. During that conflict, *Sheffield* was struck by an Argentinian-launched Exocet missile on 4 May 1982, caught fire and had to be abandoned. (Conway Picture Library)

ABOVE • HMS *REWARD*
The war-built Bustler-class fleet tug *Reward* leaving Chatham Dockyard in July 1975, following modifications there for her new role as headquarters and support ship for the Scotland and Northern Ireland Explosive Ordnance Demolition Team sent to North Sea gas production platforms, which were then under bomb alert. A 40mm Bofors gun was added forward and her radar and radio installations were upgraded. She had a ship's company of four officers and 25 ratings, and organisationally was part of the Fishery Protection Squadron. Her service ended abruptly on 10 August 1976 when she sank after colliding in thick fog with the merchant ship *Plainsman* in the Forth estuary. Fortunately, all 42 members of the ship's company were rescued by the *Plainsman*, and there were no injuries. *Reward* had been completed by Henry Robb, Leith, in March 1945, and in May 1945 was part of Force 135 for Operation *Nest Egg*, the liberation of the Channel Islands. From 1963 until 1970 she served as an RFA. (Author's collection)

ABOVE • HMS *JAGUAR*
On 10 September 1973, during the second Cod War, the Leopard-class frigate *Jaguar* collided with the Icelandic gunboat *Thor* and suffered bow damage. After repairs at Chatham, she was placed in reserve there. She was brought forward in 1976 to serve off Iceland in the third Cod War and was fitted with wood sheathing on her bow and stern, as can be seen here, to minimise damage in collisions with Icelandic gunboats. After completion in 1959 she had seen Home/South Atlantic service in the 7th Frigate Squadron before a long refit at Chatham Dockyard in 1966–67, gaining a Type 965 radar on a plated main mast. She was sold to the Bangladeshi Navy in 1978. (Crown Copyright/OGL)

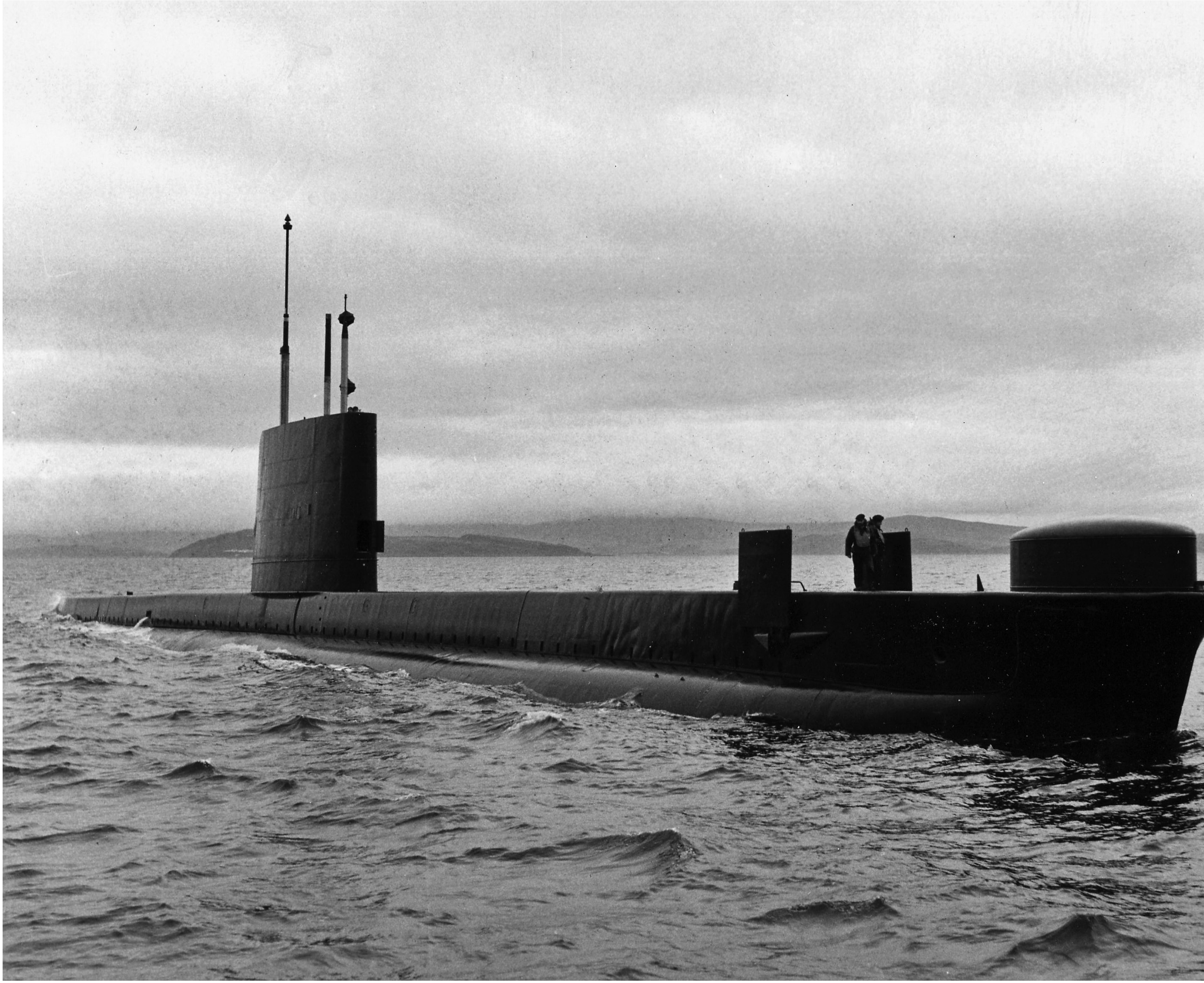
RIGHT • HMS *ANTELOPE*
Antelope, a Type 21 frigate, was built at Southampton by Vosper Thornycroft and completed in 1975. The Type 21s were unusual in having been designed by commercial shipbuilders – Vosper Thornycroft and Yarrow – rather than by the Navy's own naval constructors, and in having aluminium superstructures, rather than steel. They were the first all gas turbine frigates built for the Navy, giving large savings in engine-room personnel. As an interim design they would fill the gap before the Type 22 and 42 designs were ready. They were popular ships in the Navy, well liked for their speed and sleek appearance, and relatively spacious accommodation. *Antelope* was bombed and lost whilst defending the Falklands landings. (Author's collection)

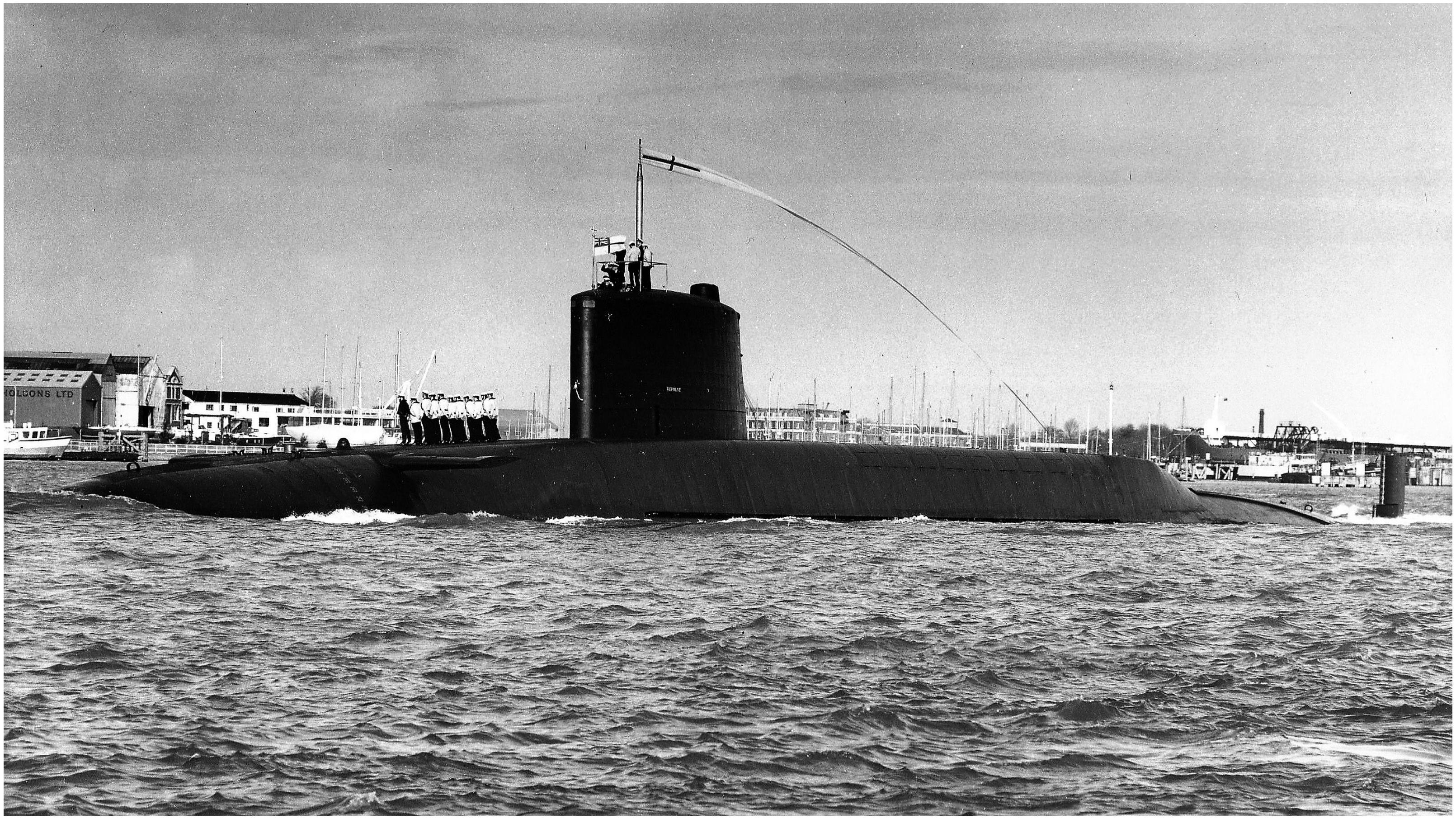
F170

ABOVE • HMS *AURORA*
Of the 26 Leander-class frigates, 20 were given major midlife refits in the seventies and early eighties, in which their twin 4.5-inch gun was replaced by a missile system forward of the superstructure. In the case of eight ships this was the Ikara anti-submarine missile, as seen here in *Aurora*, as she turns at speed off Portland Bill. She has gained another Seacat missile launcher and, in an attempt to compensate for the loss of the 4.5-inch guns, has a 40mm Bofors gun on either side of the foremast. The Type 965 radar has been removed from the mainmast. Her midlife refit was in Chatham Dockyard from December 1974 to 1976. *Aurora* was built by John Brown, Clydebank, and completed in 1964. In her first commission she was leader of the 2nd Frigate Squadron at Portland and her second was on Home/Middle East service. In 1972 she undertook Cod War patrols off Iceland. She paid off in 1987 and was scrapped in 1990. (Author's collection)

RIGHT • HMS *EURYALUS*
The Leander-class frigate *Euryalus*, seen after her conversion to the Ikara anti-submarine missile system, which replaced her twin 4.5-inch gun on the foredeck. Ikara had been developed by Australia and was fitted to the destroyer *Bristol* and eight Leander-class frigates. *Euryalus'* conversion at Devonport Dockyard started in January 1973 and was completed in March 1976. She also gained a Seacat system aft of the main mast and her two 40mm Bofors guns were relocated to positions abreast of the fore mast. She had been built by Scott's, Greenock, and commissioned on 16 September 1964 for foreign service in the 26th Escort Squadron based at Singapore. From 1966 she was on Home/East of Suez service including Beira patrols in 1968 and 1972. After her conversion she spent some time in the 2nd Frigate Squadron, based at Portland, on anti-submarine training, and in 1984 was part of NATO's Standing Naval Force Atlantic. She finally decommissioned on 31 March 1989. (Crown Copyright/ OGL)

F15





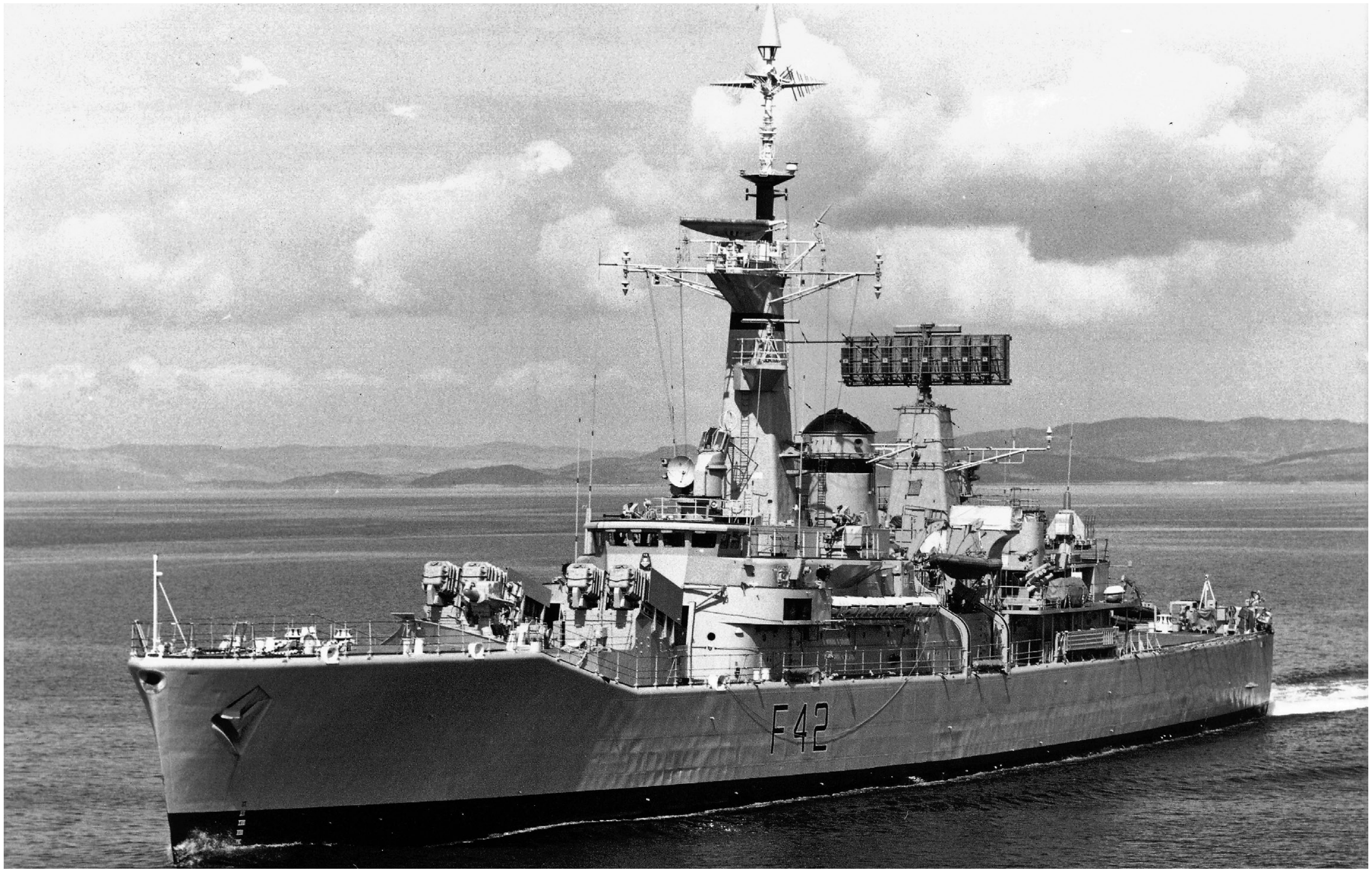
LEFT • HMS *OCELOT*
The Oberon-class submarine *Ocelot* in Gareloch, in May 1976. Launched at Chatham Dockyard on 5 May 1962, she was the 54th, and last, submarine to be built there for the Royal Navy. Her diesel engines were also built there, whilst her electric motors were by English Electric. She was commissioned on 31 January 1964 and joined the 3rd Submarine Squadron at Faslane, where the depot ship was *Maidstone*. She was armed with eight 21-inch torpedo tubes, and in the sixties was involved in trialling the new Mk 24 Tigerfish torpedo. In March 1968 she joined the 1st Submarine Squadron at Gosport. Her Cold War role included tracking Soviet submarines and carrying out other clandestine operations in the Arctic, Barents Sea and Baltic. On 28 June 1977 *Ocelot* and nine other Porpoise- and Oberon-class boats attended the Silver Jubilee Fleet Review at Spithead. She finally paid off on 6 September 1991 and became a museum ship at Chatham Historic Dockyard. (Author's collection)

ABOVE • HMS *REPULSE*
Repulse was the second Resolution-class Polaris submarine to be completed, in September 1968. She had been ordered from Vickers-Armstrongs, Barrow, on 8 May 1963, was laid down on 12 March 1965, and launched on 4 November 1967. She is shown leaving Portsmouth on 1 November 1976, flying a paying-off pennant, after paying a five-day visit, the only one she ever made to the port. She was en route from Faslane to Rosyth for a refit. In May 1979 the RN and US Navy achieved the first underwater transfer of men between two dived British submarines when a 50ft-long US deep submergence rescue vehicle (carried right aft by *Repulse* on her stern casing) ferried them from HMS *Odin*, which was lying 400ft deep off the Isle of Arran, to *Repulse*, in a simulated 'subsunk' rescue operation. On 13 May 1996 *Repulse* completed her 69th, and last, patrol, having covered 158,000 miles in 28 years. She was then laid up at Rosyth pending dismantling. (Michael Lennon)

ABOVE • HMS *HECLA*
The survey ship *Hecla* was built by Yarrow Shipbuilders at their Blythswood yard, Glasgow. Her class of four was designed for both hydrographic and oceanographic work. The hull was built to merchant ship standards, strengthened for navigation in ice, to a design based on RRS *Discovery*. They carried two small survey craft, a launch, a Land Rover, and a Wasp helicopter, for which there was a flight deck and hangar. They were chiefly funded from the Polaris programme, their major task being to carry out the regular oceanographic observations essential for the Polaris submarines to hide in thermal layers. *Hecla* was laid down on 6 May 1964, launched on 21 December1964 and commissioned on 9 September 1965. She is shown at the Silver Jubilee Review of the fleet at Spithead in 1977. In 1982 she served as an ambulance ship, painted in hospital ship colours, during the Falklands conflict, ferrying the wounded to Montevideo and Ascension. She was sold in 1997 for commercial service. (Paul Brown)

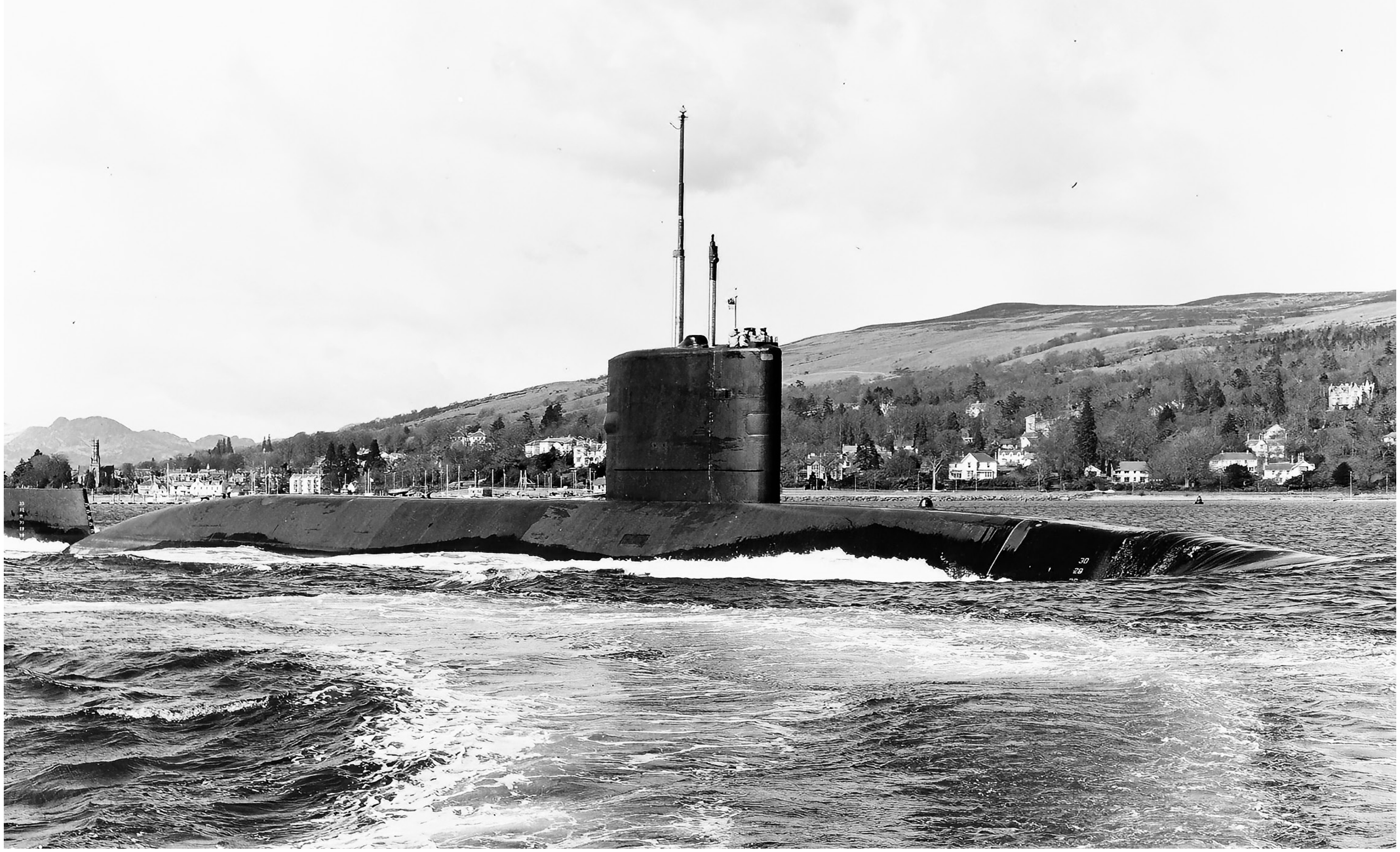
RIGHT • HMS *LYNX*
The Leopard-class frigate *Lynx* seen in the lines at the Silver Jubilee Fleet Review, Spithead, in May 1977. On her main mast can be seen the badge of the Standby Squadron, which was composed of ships in reserve at Chatham. She was built by John Brown, Clydebank, and – the first of her class to be completed – commissioned on 14 March 1957 as leader of the 7th Frigate Squadron on Home/South Atlantic service. This squadron contained all four Leopard-class ships and during its service in the South Atlantic was based at Simonstown, South Africa. *Lynx* had been given a long refit in Chatham Dockyard in 1963–64 when her lattice mainmast was replaced by a plated mast supporting Type 965 radar. She became the last ship on the South Atlantic station, leaving Simonstown on 17 June 1967, marking the end of the station. She then spent five months in the Caribbean before recommissioning for Home/East of Suez (Far East) service. In 1982 she was sold to the Bangladeshi Navy and served until 2014. (Paul Brown)

F27
F27



ABOVE • HMS *PHOEBE*
The Leander-class frigate *Phoebe* was built by Alexander Stephen, Linthouse, Glasgow, and completed in April 1966. In 1970 she spent ten months East of Suez, including three Beira patrols off Mozambique. She was modernised in Devonport Dockyard from August 1974 to April 1977, equipping her with Exocet missile launchers in place of the twin 4.5-inch gun on the foredeck. The photograph shows her after this modernisation, which was also received by six other Leanders. They retained their Type 965 radar on the mainmast, and had a 40mm Bofors gun mounted in each bridge wing. From late 1977 to early 1978 she led a task group including the frigate *Alacrity* and submarine *Dreadnought*, supported by RFAs, to the Falklands, as a show of strength. She returned there in September 1982 for post-conflict patrols. In 1978 and 1984 she was part of NATO's Standing Naval Force Atlantic. She was decommissioned in 1991. (Crown Copyright/OGL)

RIGHT • HMS *ARK ROYAL*
Ark Royal digs her bow into heavy seas at full speed in 1977, making for interesting flying operations. In 1966–70 she had been modernised at Devonport, which enabled her to operate Phantom aircraft. An 8½˚ fully angled flight deck (previously 5½˚), new steam catapults with a forward projection (visible here), heavy grade jet-blast deflectors, heavy-weight arrestor cables, an enlarged island superstructure and two type 965 radars were fitted. This would extend *Ark Royal*'s life until the late seventies, whilst *Eagle* was to pay off, despite having superior radar and being considered to be in a better material state than her sister. In June 1970 *Ark Royal* embarked her air group of Phantoms, Buccaneers, Gannets, Sea King aircraft and Wessex helicopters. On 16 November 1978 *Ark Royal* left Malta at the end of her last deployment, and two days later the last fixed-wing landing on the ship was made by a Gannet. She arrived at Devonport on 4 December and finally paid off on 14 February 1979. (Crown Copyright/OGL)



ABOVE • HMS *SUPERB*
The third Swiftsure-class nuclear-powered submarine, *Superb*, seen leaving Gareloch, was built by Vickers-Armstrongs, Barrow, launched on 30 November 1974 and commissioned on 13 November 1978. Her class had a new hull form, partly based on US Navy designs, which was fuller, and more cigar-shaped than the teardrop or whale-shaped hulls of the Dreadnought and Valiant classes, and the fin was smaller. In June 1987 *Superb* surfaced through ice at the North Pole together with two American submarines, *Billfish* and *Sea Devil*, the first time submarines from both navies had surfaced together there. The Arctic was a strategically important operating area for NATO and Soviet nuclear submarines. In May 2008 *Superb* was damaged when she hit a rock pinnacle at 16 knots in the Red Sea. In the subsequent inquiry her commanding officer and navigator were reprimanded, whilst the officer of the watch was severely reprimanded. *Superb* was not fully repaired and was decommissioned prematurely at Devonport on 26 September 2008. (© IWM MH 27510)

RIGHT • HMS *FAWN*
Fawn was one of four Bulldog-class coastal survey ships, all built by Brooke Marine, Lowestoft, and originally intended for overseas service. She was launched on 29 February 1968, completed in October 1968, and is seen here in 1979. She was a twin-screw vessel, built to commercial standards, and carried a 28.5ft survey launch in davits on the starboard side. Her main engines were four Blackstone 8-cylinder diesels, giving her a speed of 15 knots. She and her sister ship *Fox* replaced the converted Ton-class survey ships *Mermaid* and *Myrmidon*, and much of their work was in UK coastal waters during the development of the North Sea oil and gas fields. However, on 20 November 1988 *Fawn* was fired on by Guatemalan gunboats whilst carrying out legitimate and peaceful survey work in the Gulf of Honduras. A protest was made to the Guatemalan government. She paid off in September 1991 and was sold for commercial survey work. (Author's collection)

ABOVE • RFA *APPLELEAF*
The RFA tanker *Appleleaf* was acquired by the Ministry of Defence in 1979 from Cammell Laird, Birkenhead, who had launched her in 1975 as *Hudson Cavalier* but she was never delivered to her intended owner who was unable to pay for her and her sister ships. She was laid up after sea trials until chartered for ten years by the MoD and converted for replenishment at sea. Her two sister ships became RFA *Brambleleaf* and *Orangeleaf*, and another, *Bayleaf*, was ordered and built for the RFA. *Appleleaf* proved to be a useful asset, as part of the vital supply train which kept the British task force at sea during the 1982 Falklands conflict, including work inside the total exclusion zone. Between April and July 1982 she completed 125 replenishments at sea and pump-over evolutions. Between November 1986 and August 1988 she replenished ships of the Armilla patrol. When her charter ended in 1989 she was leased to the Royal Australian Navy and served until 2006. (Author's collection)

RIGHT • HMS *BULWARK*
Bulwark's service in the seventies was mainly confined to Home and Mediterranean waters, though exercises also took her to the Arctic, Baltic, Caribbean and USA. In early 1972 she spent two and a half months moored in Grand Harbour, Malta, as the headquarters ship for the planned withdrawal of British forces from the island, when relations between the British and Maltese governments were strained. However, negotiations between the two governments reached agreement and British forces remained for a further seven years. *Bulwark* was in reserve at Portsmouth from April 1976 to February 1979, when she recommissioned as a stop-gap between *Ark Royal* paying off and *Invincible* being completed, and is seen here leaving Portsmouth in that year. In 1980 she suffered fire damage whilst alongside, and there were concerns about the condition of her wiring. She was withdrawn from service six months earlier than planned, and on 27 March 1981 entered Portsmouth for the last time and paid off for disposal. (Author's collection)

CHAPTER 4

THE FALKLANDS DECADE 1980–1989

At the start of the decade Royal Navy personnel numbers totalled 71,900 including 3,800 servicewomen and 9,600 officers. There had been a massive reduction of 17,100 (19 per cent) since 1970. Royal Naval Reserve and Royal Marines Reserve forces totalled 5,100 men and 1,000 men, whilst regular reserves totalled 28,800 men and 100 women.[1]

Defence spending declined markedly in the eighties from 5.2 per cent of GDP in 1980 to 3.5 per cent in 1989. Surprisingly, the Falklands War caused only a slight spike in 1982 and 1983, and promises for increases thereafter were not fulfilled.[2]

Surface warships were organised in three flotillas, whilst the Submarine Command comprised four squadrons, based at Gosport, Devonport and Faslane (two squadrons). The Mine Countermeasures Command comprised two squadrons based at Rosyth and Portsmouth, plus the Fishery Protection Squadron and the RNR squadron.[3] The strength of the fleet in 1980 is given in the table on the next page.[4]

New construction underway in 1980 included the three Invincible-class carriers, two of which were fitting out, five Type 22 frigates, three of which were fitting out, seven Type 42 destroyers, two of which were fitting out, and two Trafalgar and one Swiftsure-class nuclear-powered attack submarines.[5] In July 1980 it was announced that the Trident ballistic missile system would be purchased to replace Polaris and four new submarines would be built to carry it.[6]

With the Iran–Iraq War erupting in the Middle East, the destroyer *Coventry*, frigates *Naiad* and *Alacrity* (in turn replaced by *Antrim*) and RFA *Olwen*, of the Far East Task Group (on an East of Suez deployment which lasted from May to December 1980), were deployed to the Gulf of Oman and Straits of Hormuz for the Armilla patrols, from 7 October 1980 onwards. They were replaced in November by the destroyer *Birmingham* and the frigate *Avenger*, supported by RFAs *Olmeda* and *Fort*

Aircraft carriers	2	Polaris (strategic) submarines	4	Inshore survey vessels	5
Commando carrier	1	Fleet (attack) submarines	12	Patrol vessels	13
Cruiser/helicopter carrier	1	Conventional (patrol) submarines	16	Diving support ship	1
Assault ships	2	Mine countermeasures vessels	36	Ice patrol ship	1
Destroyers	13	Royal yacht	1	Fast training boats	3
Frigates	54	Survey ships	8	Submarine tender	1

Austin, augmented in the following month by the frigates *Apollo* and *Ardent*, and RFA *Tidepool*. Their role was to protect British and international tankers by escorting them on this important oil supply route. These patrols continued, normally with two escorts on patrol at any one time.[7]

The 1981 Defence Review, announced by John Knott, the Conservative defence secretary, was particularly harsh on the Navy, which would bear 75 per cent of the cuts. Nott had decided to prioritise ground and air forces and slash the size of the future fleet, which would concentrate on its NATO anti-submarine role. The new aircraft carrier *Invincible* was to be sold to Australia, and the assault ships *Intrepid* and *Fearless* would be withdrawn without replacement. Nine of the Navy's 59 escorts would be decommissioned, whilst others would be placed in the Standby Squadron (reserve), which was still declared as part of Britain's NATO commitment. Plans for a new class of air-defence destroyers were scuppered. More reliance would be placed on the submarine-launched strategic nuclear deterrent to counter the Soviet threat, and the number of nuclear-powered attack submarines would be increased from ten to 17 boats, albeit at the expense of conventional submarine numbers.[8] The ice patrol ship *Endurance*, the Navy's only regular presence in the South Atlantic, Falkland Islands and Antarctica, would be paid off, as would four Royal Fleet Auxiliaries. There would be a phased redundancy programme, axing between 8,000 and 10,000 RN personnel (about 13 per cent of the total).

Chatham and Gibraltar dockyards would be closed, whilst Portsmouth would be downgraded from a major dockyard to a much smaller fleet repair and maintenance organisation, and large cuts in the dockyards' workforces would be made. There would be a rationalisation of shore establishments, leading to the closure of the gunnery school HMS *Excellent*, the damage control school HMS *Phoenix*, the torpedo, mine and diving establishment HMS *Vernon*, and the Fraser Gunnery Range, all at Portsmouth; the naval barracks HMS *Pembroke* at Chatham; the artificers' school HMS *Caledonia* at Rosyth; and the artificers' school HMS *Fisgard* at Plymouth.[9] A programme of modernisation of Devonport Dockyard was planned, including an extension to the submarine refitting complex, which would allow three nuclear submarines to be refitted concurrently.[10]

However, the defence review's plans were to be derailed by immediate events in the South Atlantic. On Friday 2 April 1982 Argentina invaded the Falklands Islands, to the surprise of most, including the Foreign Office, although tensions between the United Kingdom and Argentina over sovereignty of the islands had recently escalated after two centuries of disputed ownership. Amid economic turmoil and domestic unrest in Argentina new leaders had taken control of the ruling military junta. Popular sentiment that the Falkland Islands (the 'Malvinas') were part of Argentina was whipped up. Diplomatic negotiations were ramped up, but the UK did not expect the invasion that came. Equally, the Argentines did not expect the UK to retaliate and try to take back the islands.

The episode had begun on 19 March 1982 when a party of about 40 Argentinian scrap metal workers and some armed services personnel had arrived at Leith, South Georgia, on board an Argentine Navy transport, and raised their national flag. Ostensibly they came to salvage scrap metal from the derelict whaling station at Grytviken, but their presence was highly provocative. In response, on 20 March the ice patrol ship *Endurance* left Port Stanley in the Falkland Islands for South Georgia, carrying two Wasp helicopters and her own Royal Marines detachment of 12 men plus an extra ten from the Falklands garrison. She arrived at Grytviken on 23 March to

monitor the Argentines, who were reinforced by the arrival of a party of marines who landed from another transport.

On 26 March the junta decided to invade the Falkland Islands, and in view of the escalating situation the nuclear-powered attack submarines *Spartan* and *Splendid* were ordered to deploy to the South Atlantic. On 31 March the UK government received intelligence of the planned invasion and the First Sea Lord, Admiral Sir Henry Leach,[11] told prime minister Margaret Thatcher that the Navy could lead a campaign to reclaim the islands. He was instructed to prepare a task force to be sent south whilst international diplomatic attempts to achieve a peaceful resolution continued. Rear Admiral 'Sandy' Woodward, flag officer of the First Flotilla, was at Gibraltar exercising his flotilla of 16 destroyers and frigates, and was ordered to take command of the aircraft carrier task group. *Endurance* returned to Port Stanley after landing her party of 22 marines at Grytviken to protect the British Antarctic Survey personnel and maintain watch on Leith.[12]

The Argentinian assault on the Falklands Islands started at 3.00am (Falklands Standard Time) on 2 April when the submarine *Santa Fe* landed 20 commandos to secure a beachhead at Stanley. Another 90 commandos landed from the destroyer *Santísima Trinidad* and, after finding the Royal Marines barracks empty, assaulted Government House where, after a determined resistance by the Royal Marines (during which three Argentines were killed), the governor ordered them to surrender to a greatly superior force, to save further loss of life. The main force of Argentinian marines disembarked from the landing ship *Cabo San Antonio* to help secure the airport and harbour areas, whilst the aircraft carrier *Veinticinco de Mayo*, with 1,500 army troops on board, remained just outside Stanley harbour. Meanwhile Argentinian troops had taken South Georgia Island. On Sunday 4 April the nuclear-powered attack submarine *Conqueror* sailed from the UK for South Georgia, and on the following day the vanguard of the South Atlantic task force, including the aircraft carriers *Hermes* and *Invincible* plus destroyers and frigates, sailed from the UK to join Woodward's force. On 9 April the requisitioned P&O liner *Canberra* sailed from Southampton, carrying the 3rd Commando Brigade under the command of Brigadier Julian Thompson.

The Argentines used the period between invasion and the earliest likely arrival of the British task force to reinforce the Islands both in supplies and in building up troop levels to approximately 11,000, as well as constructing defences. The airfield at Stanley was secured, and warning radars and gun and missile batteries were set up. A significant garrison was established at Goose Green on the west side of East Falkland, and an improvised air base was created on Pebble Island.

The biggest threat to the task force would come from the air – Argentina had about 100 strike aircraft against, initially, 20 British Sea Harriers. The most feared Argentinian weapon was the Exocet – a supersonic sea-skimming missile – that once locked on to its target could not be stopped. It was fired from Dassault Super Étendards based at Rio Grande, Tierra del Fuego. They could refuel in air from a Hercules, extending their range as far as South Georgia. Only two Super Étendards were so equipped and Argentina had only five missiles of the air-launched version of Exocet, though these figures were not known to the Royal Navy.

The British task force also included amphibious ships, Royal Fleet Auxiliary tankers and stores ships, and merchant ships which were taken up from trade for use as troopships, transports, oilers, salvage tugs and repair ships. The three nuclear-powered submarines, soon joined by *Valiant*, would cover the surface ships and, when stationed just off the Argentinian coast, give early warning of air raids launched from mainland bases. Intelligence from Chilean radar was also used to give early warnings of air raids. In overall command of the South Atlantic Task Force, Commander-in-Chief Fleet Admiral Sir John Fieldhouse was based at his headquarters at Northwood, near London. Whilst Woodward commanded the carrier task group, Commodore Mike Clapp was in command of the amphibious task group, which was spearheaded by the assault ships *Fearless* and *Intrepid*. The Royal Marines of the 3rd Commando Brigade (comprising 40, 42 and 45 Commando, plus the troops of 2 Para and 3 Para) would be backed up by the 5th Infantry Brigade (which included Welsh Guards, Scots Guards and Gurkhas) under Brigadier Tony Wilson. Both brigades later came under the overall command of Major General Jeremy Moore.

On 11 April a small group of British ships led by the destroyer *Antrim* left Ascension Island with Royal Marines and SAS troops

on board to recapture South Georgia, which was achieved by 26 April. The Argentinian submarine *Santa Fe*, which had been resupplying the Argentinian garrison on the island, was attacked by helicopters from *Antrim*, *Plymouth*, *Brilliant* and *Endurance* and captured. The UK declared a 200-nautical-mile maritime exclusion zone around the Falkland Islands on 12 April, and this was modified to a total exclusion zone on 30 April, which then excluded aircraft and ships of all nations. It was on this latter date that the carrier task group entered the exclusion zone. Their initial tasks were to blockade the islands to try to prevent resupply of the Argentinian troops, to enforce the exclusion zone, and to reduce the number of enemy aircraft by attrition. At this time the order to recapture the islands by amphibious assault had not been given.

On 1 May SBS and SAS troops were inserted on East and West Falkland, and Stanley was attacked by both Royal Navy Sea Harriers and RAF Harriers, and a Vulcan bomber. The Argentines reacted with air raids on the warships of the task force. At the same time they were trying to conduct a pincer attack on the British task group, using two groups of their warships. The northern group was led by their aircraft carrier, and the southern group by the elderly cruiser *General Belgrano*. British submarines had been trying to track both of these groups but intelligence failings meant they did not find the carrier group. However, *Conqueror* made contact with *General Belgrano*, and closely followed her group. The group reversed course to head west, whilst skirting the southern side of the exclusion zone. *Conqueror* later received permission to attack the cruiser outside the total exclusion zone, and on 2 May fired three torpedoes, two of which hit, causing extensive damage. Lacking good damage control procedures, *General Belgrano* flooded rapidly and sank within 70 minutes with the loss of 323 lives.[13] This setback prompted the Argentinian surface fleet to withdraw to its bases and territorial waters, from which they never re-emerged, such was their fear of the British nuclear submarines.

On 4 May Sea Harriers attacked Port Stanley and Goose Green air strips. Wishing to avenge the loss of their cruiser the Argentines deployed the air-launched Exocet on Super Étendard jets, which approached the task group at low level before popping up to a higher altitude to gain radar contact. The westernmost ring of the task group's defence was a screen of three Type 42 air-defence destroyers, *Glasgow*, *Sheffield* and *Coventry*. *Glasgow* detected and identified the radar signals from the two approaching Super Es and their missiles coming in from the south-west, and issued a warning, which was received in *Sheffield*. *Glasgow* fired decoy chaff but did not fire Sea Dart. The warning was received by the anti-air warfare coordinator in *Invincible*, but he declared the contacts to be spurious even though radar 'paints' of the intruders had been seen at 50 and 30 miles. *Sheffield* had three minutes to react – which should have included calling ship's company to action stations, firing chaff as a decoy, launching Sea Dart missiles and firing the 4.5-inch gun at the two approaching missiles. None of these actions were taken and one of the two missiles hit the unprepared ship. It exploded, causing widespread disruption and fires, and 20 deaths. After nearly four hours of firefighting effort *Sheffield* had to be abandoned, and sank a few days later.[14] Scenes of the stricken ship shocked TV viewers back in the UK.

On 9 May two Sea Harriers attacked and sank the Argentinian intelligence-gathering trawler *Narwal* within the exclusion zone. Two days later the frigate *Alacrity* sank the Argentinian transport *Islas de los Estados* in Falkland Sound. On 12 May, 12 Argentinian Skyhawks attacked the frigate *Brilliant* and destroyer *Glasgow*: two were shot down and a third crashed into the sea trying to avoid Sea Wolf missiles fired by *Brilliant. Glasgow* suffered damage from a bomb passing directly through her hull without exploding: this put her out of action for three days as temporary repairs were effected.

On 7 May the main amphibious task group left Ascension Island for the Falklands. On 18 May the British Cabinet gave approval for amphibious landings, because the diplomatic negotiations brokered by America, Peru and the United Nations had broken down. San Carlos Water was chosen as the landing beach, because its separation from Stanley gave the best chance of successful landing and build-up of troops, whilst the landlocked nature of the inlet gave a degree of defence against air attack. The amphibious force included two assault ships, five landing ships and a number of requisitioned merchant ships including the liner *Canberra*, RFA *Stromness* and ferry *Norland* carrying 3 Commando Brigade. The group included destroyer and frigate escorts, which could also provide naval gunfire support for the troops once landed, and diversionary attacks to deceive the Argentines.

The amphibious force entered Falkland Sound on the night of 20/21 May. Overnight, five battalions, comprising 4,000 marines and paratroopers, made unopposed landings at five separate points in San Carlos Water and near Port San Carlos, without any casualties. In the morning the Argentines reacted by launching air attacks. One frigate of the covering force, *Ardent*, was hit by about six bombs in two raids by Skyhawks (three of which were shot down by Sea Harriers), and was abandoned prematurely, without a full search for survivors being carried out: 22 members of her ship's company lost their lives.[15] She subsequently sank, whilst the destroyer *Antrim* and frigate *Argonaut* were bombed and seriously damaged. Two days later the frigate *Antelope* (which had replaced *Ardent*) was bombed by Skyhawks, and two unexploded bombs became lodged within the ship. During attempts to defuse one of these bombs it exploded, and *Antelope* later sank. A steward and one of the bomb disposal team lost their lives.[16]

Argentina's national independence day was 25 May, on which the British correctly anticipated that air raids would be stepped up. Fierce attacks led to the loss of the destroyer *Coventry*, which was bombed by Skyhawks off Pebble Island whilst on patrol with the frigate *Broadsword*. *Broadsword* was hit first and in the ensuing panic *Coventry* found herself blocking the arcs of *Broadsword*'s Sea Wolf missiles, allowing the Skyhawks to get through and bomb *Coventry*.[17] On the same day the requisitioned aircraft transport *Atlantic Conveyor*, a converted Cunard car and container carrier, was hit by two Super Étendard-launched Exocet missiles whilst screening the aircraft carriers, as part of a defence arc of large auxiliaries to the west of the carrier task group. The two Super Es took off from Rio Grande, Tierra del Fuego, to the south-west of the Falklands and the task force. But they headed north for 450 miles to refuel from a Hercules aircraft 240 miles north of the Falklands. Thus, they approached the task force from the north-west, not the expected south-west.[18] Including her master, 12 lives were lost in *Atlantic Conveyor* and 19 in *Coventry*.[19] The loss of six Wessex and three Chinook helicopters in *Atlantic Conveyor* was very significant as they were intended to move British troops from the San Carlos beachhead to Stanley where Argentinian forces were concentrated. Fortunately, the Sea Harriers and RAF Harriers transported down to the region by *Atlantic Conveyor* had already been flown off to *Hermes* and *Invincible*.

Troops of the Parachute Regiment advanced on Argentinian positions at Goose Green and Darwin, which they captured on 28 May in the fierce battle of Goose Green. Royal Marines began their advance on Stanley, mostly on foot – 'yomping' over difficult terrain, deprived of helicopter lift in this so-called northern thrust, and captured positions in the hills above Port Stanley.

On 30 May the fifth, and last remaining, air-launched Exocet missile was fired by a Super Étendard at the frigate *Andromeda* in an attack intended to be on *Invincible*. Newly equipped with Sea Wolf missiles, *Andromeda* was part of a radar picket screen of three ships to the east of the carriers and should have been able to shoot it down. It locked on *Andromeda*, but fortunately ran out of fuel and fell into the sea because its target was too far away.[20]

On 3 June, in a premature move which had not been authorised by Major General Moore, Fitzroy, on the south side of East Falkland, was occupied by 2 Para to initiate a second line of advance (the southern thrust) on Stanley, but there was a setback there five days later as the necessary reinforcements arrived. The landing ships *Sir Galahad* and *Sir Tristram* had been sent carrying equipment, ammunition and several military units, including soldiers of the Welsh Guards. On 8 June, before unloading could be completed, and with all the Welsh Guards still aboard *Sir Galahad*, the ships were attacked in daylight by five Argentinian Air Force Skyhawks. Bomb and cannon hits were made on both ships causing serious fires. Unfortunately, there was heavy loss of life aboard *Sir Galahad*, with a total of 48 men killed and many more wounded. Both ships were abandoned, and *Sir Galahad* became a total loss. TV pictures of the burning of *Sir Galahad* and the rescue of its survivors became the most enduring images of the Falklands conflict for many people at home in the UK.[21] On the same day the frigate *Plymouth* was bombed and damaged in Falkland Sound.

There were major assaults on 11 June on the outer ring of Argentinian defences around Stanley, and all succeeded. But the destroyer *Glamorgan*, which had been providing naval gunfire support, entered a known enemy missile zone when trying to rejoin the battle group screen without undue delay, and was badly damaged by a land-launched Exocet missile on 12 June, off Port Stanley. It hit the hanger doors and exploded inward and downwards, destroying the hanger and its helicopter, and the

main galley. The damage control party, consisting mainly of stokers did very well: there was no panic and the firefighting was carried out quickly and efficiently, saving the ship, but 14 of the ship's company lost their lives.

A successful final assault on the capital was made by the ground troops, culminating in the surrender by General Mario Menendez of the Argentinian forces there on 14 June.

The Royal Navy supplied most of the British airpower off the Falklands. Helicopters embarked in most naval units were very versatile, providing anti-submarine defence, attack of surface targets, supporting special forces and other land operations, medical and rescue support, and giving the everyday but very necessary ability to move people and stores between the ships. Latterly many were based ashore. Sea Harrier fighters provided the main medium-range air defence as well as attacking ground targets. They played a large part in the reduction of Argentinian offensive airpower. Both aircraft carriers had far more than their normal peacetime complement of aircraft.

The biggest threat to the task force came from the air, and the British were never able to establish the air superiority that the amphibious landings needed. However, the 28 Sea Harriers from *Hermes* and *Invincible* inflicted serious losses on the Argentine air forces, destroying 23 aircraft in air-to-air combat for the loss of none of their own number in air combat (though several Harriers were lost through accident or ground fire). A further 17 enemy aircraft were destroyed by the task force's anti-air missile and gun defences. British destroyers and frigates fired 7,500 rounds against Argentine positions, giving valuable support for the troops ashore.[22]

The conflict lasted 72 days and claimed the lives of 236 British and 649 Argentinian servicemen, plus 19 British civilians from the Merchant Navy, RFA, and islanders. It was the largest naval and air combat operation between modern forces since the end of World War II. Reclaiming the islands was a remarkable achievement for the British forces which had to organise an 8,000-mile logistical train, and were pitched against powerful and determined air forces. There were many lessons to be learnt from the conflict: perhaps the most important being the need to improve radar and weapon systems (and the training of their operators) to enable them to cope more effectively with fast sea-skimming missiles like Exocet, fast and low-flying aircraft over sea and aircraft flying low over land. The requirement for effective close-in weapon systems (CIWS), as a last-ditch protection against aircraft and missiles which got through the outer rings of defence, was also highlighted.[23]

A big boost for the Navy came after the conflict, with the reversal of many of the cuts to the surface fleet announced in the 1981 Defence Review. *Invincible*'s sale to Australia was cancelled, the assault ships *Fearless* and *Intrepid* and the ice patrol ship *Endurance* were retained, and a replacement for *Sir Galahad* was to be built. The planned cut to the number of escorts would be moderated, so that 55 ships would be in frontline service instead of the planned 50. Four new Type 22 frigates would be ordered to replace the four escorts lost in the conflict. All of the aircraft lost would be replaced, and additionally a further seven Sea Harriers and six Sea King helicopters would be ordered. As well as providing the funds for the replacement costs for all the ships, equipment and aircraft lost in the campaign, it was said that the defence budget would increase by 3 per cent per annum in real terms for the next three years.[24]

Fleet and patrol submarines continued their surveillance of Soviet submarines and other intelligence-gathering activities in the Barents Sea. Shortly after returning from the South Atlantic, *Conqueror* carried out a successful clandestine sub-surface raid in the Barents Sea in July 1982, and captured Soviet Navy-towed array sonar equipment from a Polish-flagged spy trawler for technical analysis by NATO.[25]

On 18 April 1982 the submarine *Porpoise* became entangled in the nets of the Irish trawler *Sharelga*, when submerged in the Irish Sea, 25 miles off Howth, and dragged the vessel stern first for two miles before the trawler capsized. Fortunately, the five traumatised crew of the *Sharelga* were all rescued by two other trawlers, but *Porpoise* did not surface to investigate the incident.[26] *Porpoise* was reported to have been 'on a secret mission, towing sonar equipment, listening for any Soviet subs in the Irish Sea.'[27]

A ferocious civil war in South Yemen in January 1986 necessitated the emergency evacuation of British nationals and other refugees in Aden. The royal yacht *Britannia*, in the Red Sea en route to New Zealand, and the frigate *Jupiter*, destroyer *Newcastle*, and RFA *Brambleleaf* (which were at Mombasa), plus the survey ship *Hydra* (which was surveying off the coast of east Africa) were deployed to the scene. In all 1,359 civilians of 55 nations were evacuated from the beach at Khormaksar and taken to Djibouti.[28]

The continuing Iran–Iraq War meant that the Armilla patrol continued. In 1987 the number of escorts on patrol was increased to three, which tied up six destroyers and frigates when ships en route to or from the Gulf were included. It was also necessary to send a squadron of mine countermeasures vessels (MCMVs) for two periods in the eighties to clear mines in the region. The war ended in August 1988, and the last British MCMV left the area in February 1989.[29]

The fall of the Berlin wall in November 1989 was symbolic of the ending of the Cold War, and as the eastern European communist regimes were ousted, the Baltic states declared independence and the Soviet Union began to disintegrate, whilst economic circumstances forced it to scale down its military activities. This in turn created a peace dividend, which would allow military cuts to be made in the West in the opening years of the next decade.

RIGHT • HMS *GLAMORGAN*
The destroyer *Glamorgan* seen after her refit in Portsmouth Dockyard 1973–74, when her 'B' gun turret was replaced by an Exocet missile launcher, and her middle pair of boats were replaced by two triple torpedo launchers. In late March 1982 she joined Exercise Springtrain from Gibraltar, with 16 other destroyers and frigates. On 2 April she and seven other destroyers and frigates were ordered to steam south from Gibraltar to Ascension and thence to the Falklands region, with Rear Admiral Sandy Woodward, the task group commander, flying his flag in *Glamorgan*. Her main roles during the ensuing conflict were to provide close protection to the two aircraft carriers and overnight naval gunfire support to the land operations. On the night of 11/12 June she provided naval gunfire support west of Port Stanley, but when leaving was hit and badly damaged in the hangar area by a land-launched Exocet missile. Unfortunately, 13 men died, and another later died of his injuries. (Author's collection)

D19

ABOVE • HMS *BRECON*
The mine countermeasures vessel *Brecon* was the first ship of the Hunt class, which had glass reinforced plastic (GRP) hulls to reduce their vulnerability to magnetic influence mines. Built by Vosper Thornycroft, Woolston, and commissioned in December 1979, her early life was taken up by first-of-class trials and work up. In late June 1982 she and her sister ship *Ledbury* arrived in the Falklands to complete the work undertaken by the minesweeping trawlers. They found and disposed of a further eight mine cases which had either remained attached to their sinkers (known as married failures) or had flooded and consequently sunk to the seabed. In 1998 *Brecon* was assigned to the Northern Ireland Squadron. (Author's collection)

RIGHT • HMS *ARGONAUT*
The Leander-class frigate *Argonaut* was built by Hawthorn Leslie, commissioned in 1967, and modernised in Devonport Dockyard with Exocet launchers in 1979–80. On 18 May 1982 she joined the carrier battle group off the Falklands. On 21 May she was off Fanning Head defending the landings when she came under attack from Skyhawks and was hit by two bombs. Neither exploded but two ratings were killed when one of the bombs entered the Seacat magazine and detonated two missiles. The other bomb badly damaged the boiler room, leaving the ship dead in the water. She was towed into San Carlos Water, where the bombs were safely removed as she continued to defend the anchorage. (Author's collection)

F56

ABOVE • HMS *ANGLESEY*
Anglesey was an Island-class offshore patrol vessel commissioned on 1 June 1979. Her class consisted of seven ships, all built by Hall Russell, Aberdeen, and together they formed the Fishery Protection Squadron. *Anglesey* was built with enlarged bilge keels to damp down motion in heavy weather, a problem found in the early ships of this class. Their duties included defence of offshore natural gas and oil facilities as well as the protection of fishing grounds. They carried an Avon Sea Rider semi-rigid boat for boarding, and typically a ship would board and inspect 150 fishing vessels each year. The 40mm gun was later replaced by a 20mm Oerlikon. On her first patrol, in July 1979, *Anglesey* was one of the first RN ships on the scene when the Fastnet yacht race was wrecked by bad weather, and she rescued seven sailors from the yacht *Bonaventure II*. She was withdrawn from service in 2002 and sold to the Bangladeshi Navy. (J&G Ship & Maritime Photographic Collection)

RIGHT • HMS *AMBUSCADE*
The Type 21 frigate *Ambuscade* was built by Yarrow, Scotstoun, and accepted into service in August 1975. On 9 April 1982 she left Devonport to join the Falklands task force, and after guardship duties at Ascension joined the carrier battle group on 21 May, with *Antelope*. On 25 May, whilst screening the battle group, *Ambuscade* narrowly missed being hit by Exocet missiles, having fired chaff which deflected the missiles towards the aircraft transport *Atlantic Conveyor* (which was hit and had to be abandoned). *Ambuscade*'s duties then switched to escorting ships in and out of San Carlos Water and also naval gunfire support of land operations, firing 460 rounds from her 4.5-inch gun. On 27 April 1983 she was exercising with ships of the US Navy in the Indian Ocean when she collided with USS *Dale*, resulting in part of *Ambuscade*'s bows being torn away. A new bow was constructed and fitted in Bombay Dockyard. (Crown Copyright/OGL)

F172

F101

LEFT • HMS *YARMOUTH*
The Rothesay-class frigate *Yarmouth* was part of the 1982 Falklands carrier battle group. On 4 May, when *Sheffield* was hit, *Yarmouth* provided anti-submarine protection for *Arrow*, as the latter was engaged in firefighting. After *Sheffield* had been abandoned *Yarmouth* (which had rescued a number of survivors by Gemini boat) took her in tow, but 29 hours later *Sheffield* sank. On 20–21 May she escorted ships of the amphibious force into Falkland Sound and San Carlos Water. When *Ardent* was hit she came alongside and rescued the survivors. By day *Yarmouth* was part of the air defence force for the landing areas, and by night was engaged in naval gunfire support, covert operations and anti-submarine patrols. On 23 May she and *Brilliant* engaged the Falklands coaster *Monsunen*, which was by then under Argentinian control, and the coaster ran itself aground. During the conflict *Yarmouth* fired over 1,000 rounds from her 4.5-inch guns, mostly in shore bombardment, and 58 Limbo anti-submarine mortar rounds. (Crown Copyright/OGL)

ABOVE • HMS *BRILLIANT*
The frigate *Brilliant*, the second Type 22, was built by Yarrow, Scotstoun, and completed in April 1981. She was part of the Falklands task force and made the first successful use of the Sea Wolf missile in combat by destroying three Argentinian Skyhawk jets on 12 May 1982. Two were struck by missiles whilst the third hit the sea when trying to avoid a missile. The Type 22, with two sextuple Sea Wolf and one quadruple Exocet missile launchers, was the first major British warship to be built without major gun armament, though this was deemed to be a shortcoming during the Falklands conflict because the class could not be employed in naval gunfire support of land operations. The first group of women to serve as full members of a Royal Navy ship's company joined *Brilliant* in October 1990. She was paid off from RN service in 1996 and sold to the Brazilian Navy. (Author's collection)

ABOVE • HMS *COVENTRY*
The Type 42 destroyer *Coventry* sailed in early April 1982 from Gibraltar for the Falklands exclusion zone, where with *Sheffield* and *Glasgow* she formed an air-defence screen for the carrier battle group. 25 May found *Coventry* detached from that group, patrolling with the frigate *Broadsword* in an exposed position, seven and a half miles north of Government Island, acting as a 'missile trap', whilst protecting the amphibious landings area. In the morning *Coventry* shot down two Argentinian Skyhawks and directed Sea Harriers which shot down three Daggers. Her position became known to the Argentines, who directed two successive pairs of Skyhawks towards them, and – after *Broadsword* was hit by the first pair – *Coventry* fell victim to three bombs from the second pair. Quickly the ship began to capsize, and her men had to take to the water and swim towards life rafts that had been released from the ship and inflated. Regrettably, 19 men died including two officers. (J&G Ship & Maritime Photographic Collection)

RIGHT • HMS *GLASGOW*
The destroyer *Glasgow* (photographed in July 1983) was one of three Type 42s which sailed in April 1982 with the first groups of ships in the Falklands task force and together formed an air-defence screen to the west of the carrier battle group inside the exclusion zone. On 4 May *Glasgow* detected the approaching Super Étendard jets carrying Exocet missiles. She fired chaff decoy and sent a warning to the other ships, but this was not heeded by *Sheffield*, which succumbed to an Exocet. Eight days later Argentinian Skyhawks attacked *Glasgow* and the frigate *Brilliant*: two were shot down by *Brilliant*'s Sea Wolf missiles and one crashed into the sea trying to avoid another missile. *Glasgow* suffered serious damage from a bomb passing directly through her hull without exploding: this disabled her Tyne cruising engines and put her out of action for three days whilst temporary repairs were effected. In both of these incidents *Glasgow*'s Sea Dart missiles failed to fire at the oncoming aircraft. (Conway Picture Library)

D88

ABOVE • RFA *SIR GALAHAD*
The LSL (landing ship logistics) RFA *Sir Galahad* seen entering Portsmouth harbour. In early June 1982 she was tasked with taking soldiers of the Welsh Guards to Bluff Cove, an assignment that was to end fatefully with the largest British loss of life in a single incident during the Falklands conflict, and life-changing injuries for many. She joined her sister ship *Sir Tristram* at Fitzroy, and whilst unloading of stores and disembarkation of troops was underway the two ships were attacked by four Argentinian Skyhawks. Two 500lb bombs hit the stern of *Sir Tristram* whilst three hit *Sir Galahad* aft, and she was also struck by a short burst of 30mm cannon fire. No bombs exploded, but there were two fire-fronts. Black smoke billowed from both sides of *Sir Galahad* and from the engine fan rooms, and there were fires on two or more deck levels. The fires quickly became out of control and the ship had to be abandoned. (Author's collection)

ABOVE • RFA *PEARLEAF*
The replenishment tanker *Pearleaf* was the oldest RFA in the Falklands task force, having been built by the Scotstoun yard of Blythwood Shipbuilding and completed in January 1960, when she was taken up on long-term charter by the Royal Navy. Her Doxford six-cylinder diesels gave her a top speed of 16 knots. Her sister ship *Plumleaf* was also chartered and both ships were fitted for abeam and astern refuelling at sea, although they were primarily intended as freighting tankers. However, *Pearleaf*'s role in the early eighties was as replenishment tanker. In 1981 (twice) and 1983 she supported the Armilla patrol in the Persian Gulf. On 5 April 1982 she sailed from Portsmouth in the first wave of the Falklands task force and entered the total exclusion zone on 4 May. On 2 August 1982 she returned to Gibraltar on completion of Operation *Corporate* duties having completed 80 replenishments at sea. In 1986 she was returned to her owners.
(© IWM FKD 586)

LEFT • HMS *HERMES*
A Sea Harrier is launched from the aircraft carrier *Hermes* during the Falklands conflict, in the South Atlantic. Sea King helicopters can also be seen on the flight deck. *Hermes* had been converted back to a general-purpose carrier (with a 'ski-jump' ramp added) in Portsmouth Dockyard in 1980–81, and after post-conversion trials in June 1981 had embarked 800 Squadron Sea Harriers and 826 Squadron Sea Kings. Whilst in the South Atlantic this was reinforced by 809 Squadron Sea Harriers, 1 Squadron RAF ground-attack Harriers and Lynx helicopters from 815 Squadron. During the conflict *Hermes* and *Invincible* flew 2,000 operational Sea Harrier sorties with no air-to-air combat losses, though several aircraft were lost to ground fire or accidents. *Hermes* returned to Portsmouth on 21 July 1982, having played a major role in the recapture of the Falkland Islands. In April 1984 she was placed in reserve at Portsmouth, pending the completion of the new *Ark Royal*, after which she was sold to the Indian Navy. (Author's collection)

ABOVE • HMS *ARDENT*
The stricken Type 21 frigate *Ardent* off North West Island on 21 May 1982. The frigate *Yarmouth* is alongside evacuating personnel from *Ardent* after the call to abandon ship had been made. *Ardent*, in a vulnerable position in the exposed waters of Grantham Sound, had been struck aft by bombs dropped from Argentinian Skyhawks as she defended the San Carlos Water landings. The ship was abandoned prematurely and probably unnecessarily, and a full search for possible survivors was not made in the damaged parts of the ship. Although the after part of the ship was badly damaged, an assessment made by the marine engineering officer and the first lieutenant that the ship could shortly 'plunge' was incorrect and was not adequately questioned by the ship's captain. The greatest danger came from the fire aft on the port side, but the resources to fight the fire were available. The board of inquiry concluded that had the fire been contained *Ardent* would not have sunk.
(© IWM FKD 140)

ABOVE • HM Ships *ARROW* and *SHEFFIELD*
The Type 21 frigate *Arrow* alongside the stricken destroyer *Sheffield*, 4 May 1982. Part of the battle group's screen when *Sheffield* was hit, she rendered assistance by transferring a gas turbine pump to the aft firefighting team and using her fire-main to supply hoses directed onto the destroyer's hull. When *Sheffield* was abandoned, 225 of the 261 surviving personnel were rescued by *Arrow*. She had been engaged off Gibraltar in Exercise *Springtrain* and was ordered south, entering the total exclusion zone with the carrier battle group on 1 May, and on that day was bombarding Stanley airfield when she suffered minor damage in an air attack and her Seacat aimer was wounded. During the Falklands campaign *Arrow* fired 902 rounds from her 4.5-inch gun in naval gunfire support operations. On the night of 10/11 May she was reportedly targeted by a torpedo from the submarine *San Luis*, which hit her towed decoy. (© IWM FKD 2319)

RIGHT • HMS *ANDROMEDA*
The Leander-class frigate *Andromeda*, the last ship built by HM Dockyard, Portsmouth, was commissioned on 2 December1968. Seen after her modernisation in Devonport Dockyard (which was completed in February 1982), the launcher of her Sea Wolf missile system, which has replaced her Seacat system, is prominent on her foredeck and, just aft of that is the frame of her Exocet launcher, which has replaced the twin 4.5-inch gun turret. On 25 May 1982 she entered the Falklands total exclusion zone as one of the later *Bristol* group additions to the task force. On 30 May the fifth, and last, air-launched Exocet missile was fired by an Argentinian Super Étendard fighter at *Andromeda* (who was part of a radar picket screen, together with *Exeter* and *Avenger*, to the west of the aircraft carriers). It had locked on *Andromeda*, which should have been able to shoot it down, but fortunately ran out of fuel and fell into the sea, because its target was too far away. (Author's collection)

F57

ABOVE • RFA *ENGADINE*
Engadine was a helicopter support ship that deployed to the Falklands during the conflict. She sailed from Devonport on 10 May 1982 with four Wessex HU5 helicopters of 847 Squadron 'A' Flight embarked, to augment the helicopters employed in the amphibious landing area, plus additional air and ground crews. She entered the total exclusion zone on 6 June. For the next month she provided a support service and refuelling base for Wessex helicopters in the San Carlos Water area. On 7 July she sailed for the UK and arrived back at Devonport on 30 July. She had been built by Henry Robb, Leith, and accepted into service on 15 December1967. One of her main roles in peacetime was providing training at sea for new helicopter aircrew. Her ship's company included RN as well as RFA personnel. In February 1989 she was decommissioned, having been replaced by *Argus*. (© IWM MH 27596)

ABOVE • HMS *INTREPID*
The assault ship *Intrepid* arrived at Portsmouth on 27 November 1981 to pay off and de-store at the end of her Royal Navy service, having – like her sister ship *Fearless* – been a victim of the 1981 Defence Review cuts. However, on 8 March 1982 both ships were given a reprieve and would be retained, with one ship intended to be in service at any one time. On 5 April, three days after the Falklands invasion, it was decided that *Intrepid* would join *Fearless* in the South Atlantic task force and she had to be rapidly reactivated, manned and stored. On 21 April she left Portsmouth for a brief work-up at Portland and a stop-off at Plymouth to embark men of the 2nd Battalion Parachute Regiment. She headed south to join the amphibious task group, and Royal Marines of 45 Commando and troops of 3 Para were embarked at sea from *Canberra*. On the night of 20/21 May she entered Falkland Sound with *Fearless* in the first wave of the amphibious assault. (© IWM FKD 585)

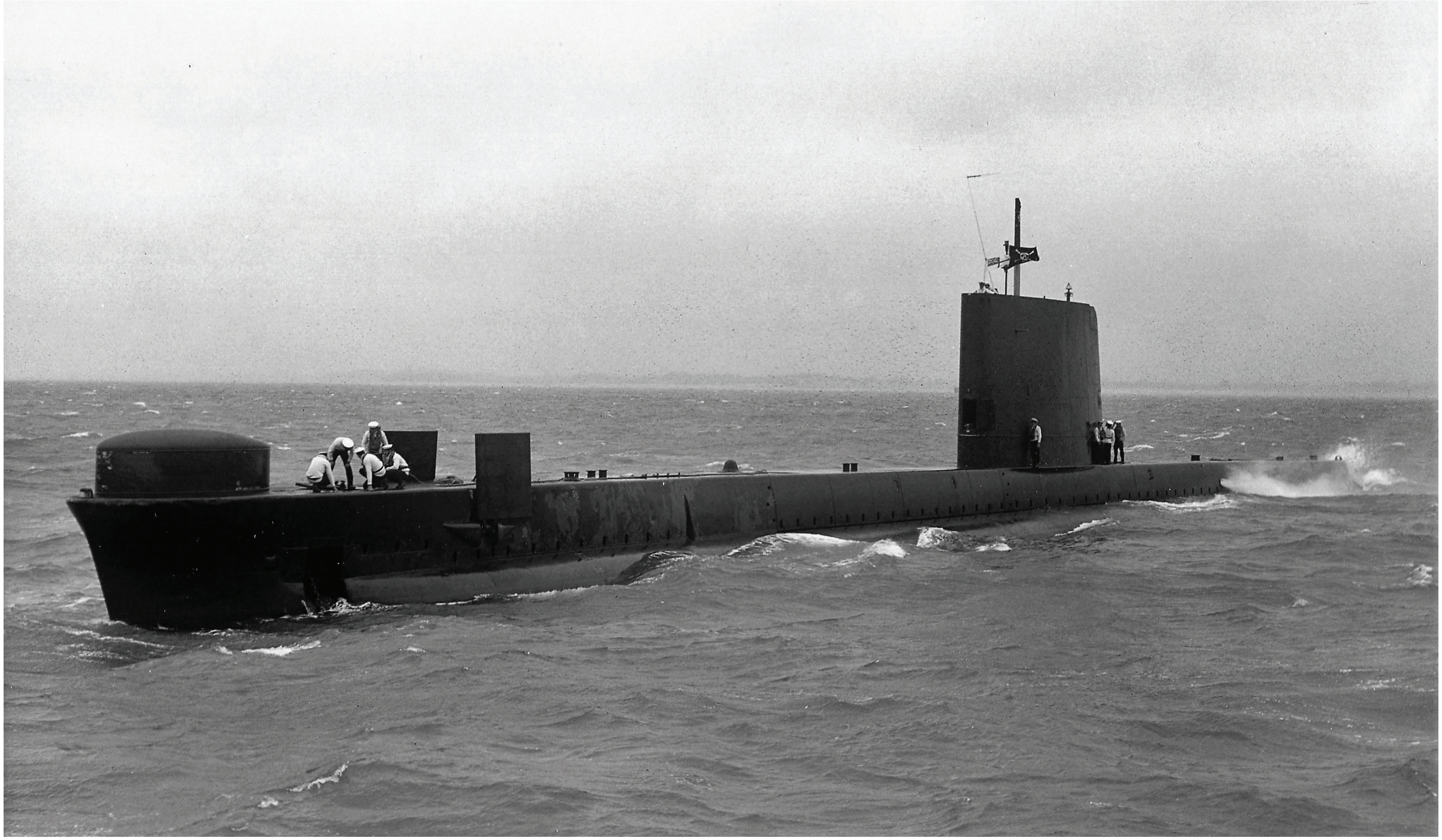
P258
LEEDS CAST

LEFT • HMS *LEEDS CASTLE*
Leeds Castle was a Castle-class offshore patrol vessel completed by Hall Russell, Aberdeen, in October 1981, and was deployed in fishery protection duties in March 1982. Following the Falklands invasion, she and her sister ship *Dumbarton Castle* were assigned duties as despatch vessels, carrying stores and personnel between Ascension Island and the Falklands/South Georgia region. She sailed from Portsmouth on 29 April and returned to the UK in August. Thereafter she alternated with *Dumbarton Castle* on three-year deployments as Falklands guardship with constant trickle drafting for the ship's company. An air search radar was added, and the Castles provided 'up threat' radar picket duties, resupplied the South Georgia garrison, visited outlying settlements and carried out fishery protection. They were ideally suited to South Atlantic operations, having excellent sea-keeping qualities, long-range, a relatively good and sustainable speed, the ability to transport and land up to 120 troops, and a large flight deck capable of operating a Sea King helicopter. (C & S Taylor)

ABOVE • RFA *REGENT*
Regent was a large replenishment ship, also known as an AEF (ammunition, explosives and food stores ship) built by Harland & Wolff, Belfast, and completed in June 1967. Her steam turbines gave her a top speed of 20 knots. She and her sister ship *Resource* were the first RFAs to be allocated permanent flights, being fitted with full aviation facilities to carry Wessex HU5 helicopters. On 19 April 1982 she sailed from Plymouth Sound to support the Falklands task force and entered the total exclusion zone on 8 May. She is seen at anchor off King Edward Cove, South Georgia, having called at the island on 17 June 1982 to replenish her stores before sailing on 24 June to Port Stanley, at the end of the Falklands conflict. *Regent* was a vital part of the fleet train and carried out replenishment at sea using large jackstay rigs or her two Wessex helicopters. She was sold in 1993 for breaking up. (© IWM FKD 137)

ABOVE • HMS *PICT*
Pict, a minesweeping trawler, approaches Rosyth on 11 August 1982 on her return from the Falklands. She was one of five deep-sea Hull trawlers requisitioned in April 1982 because the Navy's Ton-class minehunters were ill-suited to the severe weather conditions of the South Atlantic. The trawlers were modified in Rosyth Dockyard, where minesweeping and communications equipment were fitted. Forming the 11th MCM Squadron, they were manned by crews from the minehunters. *Pict* sailed on 26 April and arrived off South Georgia on 25 May. There the trawlers were used to ferry stores and personnel between ships. They then sailed to East Falkland and arrived at Port Salvador on 9 June. On 11 June *Pict* swept the entrance to Berkeley Sound to clear the gunline approach for frigates, no mines being found. After the Argentinian surrender the five trawlers started to clear the approaches to Port Stanley and Port William. Ten mines were found and cleared, three of them by *Pict*.
(Michael Lennon)

ABOVE • HMS *ILLUSTRIOUS*
The aircraft carrier *Illustrious* arrives at Portsmouth for the first time, 21 July 1982. Built by Swan Hunter, Wallsend, and completed on 18 June 1982 after the final stages of her fitting out were accelerated to allow her to relieve *Invincible* off the Falklands in August. She embarked her air group, comprising 809 Squadron (Sea Harrier), 814 Squadron (anti-submarine Sea King) and 824D Squadron (early warning Sea King), during her operational sea training. The early warning helicopters had been hastily prepared to provide the airborne early warning of air attacks, which had been sorely absent during the Falklands combat operations, a capability that had lapsed when *Ark Royal* paid off. On 21 October 1982 *Illustrious* handed over responsibility for the air defence of the islands to the RAF. Prominent on her foredeck is the Sea Dart missile launcher. The white-capped devices on the bow and stern are Vulcan Phalanx close-in weapon systems – another new requirement highlighted in the conflict. (Mike Welfare)

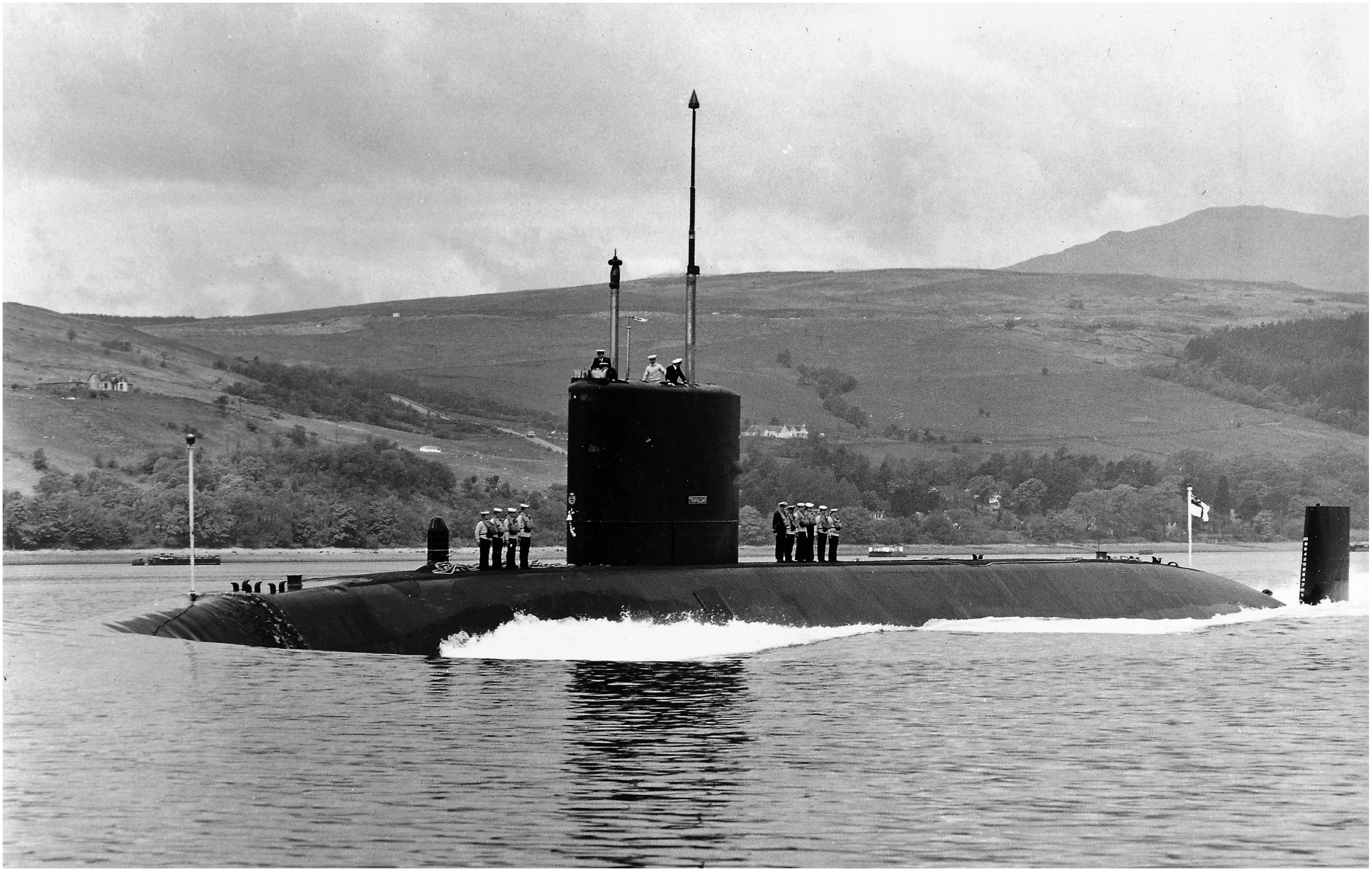


LEFT • HMS *INVINCIBLE*
Invincible is welcomed back to Portsmouth on 17 September 1982 from the Falklands. The design of her class had evolved from an emphasis on the roles of task force command, control of land-based aircraft and operation of anti-submarine helicopters to one where the fixed-wing aircraft capability became more important as naval versions of the Harrier became available. The result was a light aircraft carrier, with a 'ski-jump' ramp forward for launching Harriers, that could carry up to 20 aircraft and helicopters, and proved invaluable in the Falklands conflict. By the end of that campaign her Sea Harriers had flown 599 combat missions and her Sea King helicopters had flown 3,099 operational sorties, most of them anti-submarine. *Invincible* was built by Vickers, Barrow, from whom she was ordered in April 1973, and completed on 11 June 1980. After trials and work-up she became operational on 19 June 1981 and later that month embarked her initial air group of five Sea Harriers plus Sea King helicopters. (Crown Copyright/OGL)

ABOVE • HMS *ONYX*
The Oberon-class submarine *Onyx* at Spithead, 18 August 1982, on her return from the Falklands conflict, in which she was the only British conventional submarine deployed. She had left Ascension on 13 May 1982 and completed a submerged passage to San Carlos Water on 31 May. She carried a special five-man diving chamber and was fully armed with ten Mk 24, two Mk 20 and eleven Mk 8 torpedoes. Smaller in size than nuclear submarines, she was well-suited for clandestine operations such as inserting special forces under darkness, with less chance of detection than the frigates which had hitherto undertaken those duties. During one mission she struck an uncharted pinnacle while submerged at 150 feet. The lower bow casing and outboard end of a torpedo tube were damaged, jamming the warhead of a torpedo in the tube. The torpedo was eventually removed whilst the submarine was in a floating dock at Portsmouth Dockyard, in a difficult and dangerous operation. (Michael Lennon)

ABOVE • HMS *CONQUEROR*

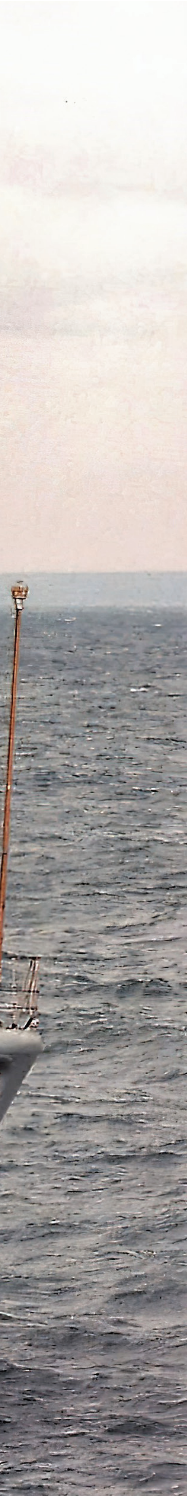
In the afternoon of 2 May the veteran Argentinian cruiser *General Belgrano* was steaming on a westerly course, skirting the total exclusion zone south of the Falklands, when the nuclear-powered submarine *Conqueror*, a deadly and unseen foe, struck. Her torpedoes raced towards the cruiser and two of them hit on the port side, causing the old ship to flood rapidly, and to roll over and sink just 15 minutes after the last man had abandoned ship. *Conqueror* increased speed and went deep to avoid any attack from *Belgrano*'s escorting destroyers, which had failed to detect her even though she had shadowed the group for 29 hours. The destroyers sped away from the scene, without attempting to rescue *Belgrano*'s survivors, to avoid being attacked themselves. *Conqueror* is seen here on her return to her Faslane base flying the Jolly Roger (a tradition for submarines returning from a successful mission). She was the first nuclear submarine to sink an enemy ship in combat. (© IWM FKD 36)



ABOVE • HMS *TRAFALGAR*

Trafalgar, the name ship of the Trafalga-class nuclear-powered submarines, was built by Vickers, Barrow, and commissioned on 27 May 1983. The class was a development of the Swiftsures, with the same machinery but had a slightly lengthened hull, more powerful sonars and a revised internal layout. New noise reduction modifications were incorporated as part of the continuing drive for quieter boats, including anechoic tiles covering the outside of the hull – the first submarines to be so fitted at build. On 1 March 2002 *Trafalgar* entered Devonport flying the Jolly Roger, following her launch of Tomahawk cruise missiles against the Taliban and Al Qaeda in Afghanistan in October 2001, a first for a British submarine. In November 2002 she ran aground off the Isle of Skye, whilst conducting 'Perisher' training for prospective submarine commanders, causing £5 million worth of damage to her hull and injuring three sailors. *Trafalgar* was decommissioned at Devonport in December 2009. (Author's collection)

F58



LEFT • HMS *HERMIONE*
Hermione was a broad-beamed Leander-class frigate launched by Alexander Stephen & Sons, Linthouse, who also built her steam turbines, but was completed by Yarrow, Scotstoun, in July 1969, having been the last warship to be launched by Stephen. One of five ships of the class to be given Sea Wolf and Exocet missile systems during midlife long refits between 1978 and 1984, she is seen here in that form following her long refit at Chatham Dockyard between January 1980 and August 1983. Plans to convert the other five broad-beam Leanders were scuppered by the 1981 Defence Review, in view of the very high costs of the conversion work. On completion of her refit *Hermione* was the last warship to leave HM Dockyard, Chatham before its closure. Joining the 8th Frigate Squadron, she saw service in the Middle East in the eighties and returned to the area in 1991 as part of the Armilla patrol. She was decommissioned in the following year. (Crown Copyright/OGL)

ABOVE • HMS *GUARDIAN*
Guardian was one of three oil-rig support vessels purchased by the Ministry of Defence in 1983 and converted for use as patrol vessels in the Falklands. She had been built in1975 by Beverley Shipyard as *Seaforth Champion* for Lloyds and Scottish Development Ltd, though she was managed by Seaforth Maritime. She had a gill-jet bow thruster and was strengthened for operations in ice. Together with her sister ship *Protector* (ex-*Seaforth Saga*) she was commissioned into the Royal Navy on 21 October 1983. The third ship, *Sentinel* (ex-*Seaforth Warrior*) was commissioned on 14 January 1984. *Guardian*, seen leaving Portsmouth in late 1983, was armed with two 40mm guns abaft the bridge and two machine guns, and carried a Royal Marines detachment. Her diesel engines gave her a speed of 13.5 knots. The three ships proved unsuitable for the heavy seas of the South Atlantic and soon returned to the UK. *Guardian* was sold in 1987. (Author's collection)

ABOVE • HMS *STARLING*
The Peacock-class patrol vessel *Starling* seen at Portsmouth in July 1984, newly built by Hall Russell, Aberdeen, before her commissioning in the following month. She and her four sister ships were built to replace the Ton-class patrol ships in the Hong Kong Squadron and 75 per cent of their construction cost was paid for by the Hong Kong government. They were armed with a 76mm gun, with Sea Archer fire control radar, and four general purpose machine guns. They each carried two Sea Rider RIBs manned by a small detachment of Royal Marines and serviced by telescopic cranes, and they were fitted for replenishment at sea. Their Crossley Pielstick diesels gave them a top speed of 25 knots. They were said to be capable of remaining at sea during typhoons. In 1997, with the handover of the colony to China, *Starling* was sold to the Philippine Navy, together with *Peacock* and *Plover*. (© NMRN)

ABOVE • RFA *GREY ROVER*
Grey Rover (seen in 1984) was a small fleet replenishment tanker built by Swan Hunter, Hebburn, and accepted into service on 16 April 1970. Her original engines were unsatisfactory, and she was re-engined in April 1974 with two 16-cylinder Crossley diesel engines, which gave her a speed of 19.5 knots. In October–November 1973 she supported RN ships in the second Cod War off Iceland. In June 1976 she was with the ships standing by during the evacuation of British nationals from Lebanon. During the Falklands conflict she was based at Portland as the only operational RFA tanker remaining on the home coast. She carried out replenishment-at-sea trials with ships taken up from trade which were en route to the Falkland Islands, in the South Western Approaches to the English Channel. From 30 January 2003 she was retasked from a South Atlantic deployment, until 20 April 2003, for Operation *Telic* – the Second Gulf War – joining 13 other RFAs. (Author's collection)

LEFT • RFA *RELIANT*
Reliant was formerly the container ship *Astronomer*, which had been taken up from trade and modified as an aircraft transport during the Falklands conflict. Afterwards she was chartered by the MoD and refitted as an air support ship by Cammell Laird, Birkenhead. Renamed *Reliant*, she was accepted into service on 16 November 1983, to trial the US Navy's Arapaho concept for containerised air support which quickly converted merchant vessels into aircraft carriers with a flight deck, maintenance hangar, fuel supply, accommodation, defensive armament and supporting equipment. The flight deck was formed from large panels that locked into existing container fittings and allowed the concurrent operation of two of the five Sea King helicopters embarked. The hangar was positioned forward of the flight deck, with its sides constructed from two tiers of containers. In early 1984 she was in the Lebanon relief operation, and in November was deployed to the Falklands for 18 months. She was decommissioned in July 1986. (Author's collection)

ABOVE • HMS *BIRMINGHAM*
The second Type 42 destroyer, *Birmingham*, was built by Cammell Laird, Birkenhead, and commissioned on 3 December1976. Unlike the first of class, *Sheffield*, she, and all others of the class, were fitted with two triple anti-submarine homing torpedo tubes. In March–April 1977 she and the frigate *Arrow* were engaged in Arctic proving trials. In 1980 she was engaged in the Armilla patrol, protecting oil rigs and shipping during the Iran–Iraq War. *Birmingham* spent considerable time in the post-conflict role of patrolling the Falklands and acting as a radar picket. In 1985 she was part of the Standing Naval Force Mediterranean. After a refit at Rosyth her next deployment was to the Persian Gulf, returning in May 1989. She finally paid off at Portsmouth on 10 December1999. After de-equipping to provide spares for others of the class she was sold for breaking up in Spain, and left Portsmouth under tow on 20 October 2000. (J&G Ship & Maritime Photographic Collection)

ABOVE • HMS *BEAVER*
The Type 22 frigate *Beaver* was a Batch 2 Type 22 frigate ordered from Yarrow, Glasgow, on 25 April 1979 and commissioned on 18 December1984. Her Olympus gas turbines gave her a top speed of 30 knots whilst her Tyne gas turbines allowed cruising at up to 18 knots. The Batch 2 ships were 50ft longer than Batch 1 and had a more sharply raked stem. *Beaver* is seen entering port at Pearl Harbor, Hawaii, in 1986 during Exercise *RIMPAC*. The Batch 1 and 2 Type 22s had short operational lives in the Royal Navy, in some cases as little as 12 years. *Beaver* became a victim of the 1998 Strategic Defence Review. She was decommissioned on 1 May 1999 after 15 years' service and, as no overseas navy buyer could be found for her, was sold on 21 February 2001 for breaking up at Aliaga, Turkey. (US Navy/ PH2 Thompson)

RIGHT • RFA *SIR GALAHAD*
To replace the lost *Sir Galahad* another landing ship (LSL) of the same name was ordered in 1984 from Swan Hunter, Wallsend. The design incorporated many improvements including a large bow visor instead of bow doors, for discharging men and equipment onto a beach. There was more spacious and improved vehicle stowage and, like the earlier LSLs, she also had a stern ramp and a 22-tonne capacity scissor lift amidships for offloading operations. She had two helicopter landing spots: amidships for Chinook or smaller, and aft for Sea King or smaller. She entered service in November 1987 and arrived at her base, Marchwood Military Port, on Southampton Water, on 3 December. She was deployed to the Middle East in both the 1991 and 2003 Gulf Wars. She was finally decommissioned in 2006 before her sale to the Brazilian Navy, in which she served until 2019. (Crown Copyright/OGL)

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CHAPTER 5

PEACE AND WAR 1990–1999

On 25 December 1991 the Soviet Union flag was hauled down for the last time. The nineties were to see huge reductions in UK defence spending, largely due to the 'peace dividend' generated by the collapse of eastern European communist regimes and the disintegration of the Soviet Union during 1988–91, and big reductions in the size of Russia's armed forces. UK defence spending had dropped to 3.5 per cent of GDP by 1990 and stabilised at that for three more years before cuts over several years, after the exit of the UK from the exchange rate mechanism, had reduced it to 2.6 per cent by 1999.[1] The Navy lost a lot of ships during the nineties, for example the 47 destroyers and frigates were reduced to 33 and the number of submarines reduced from 30 to16.

The fleet at the start of the decade is given in the table on the next page. The surface fleet was organised into three surface flotillas – one consisting of destroyers and frigates, one National Task Group, and one consisting of aircraft carriers, assault ships, the ice patrol ship *Endurance* and the diving support ship *Challenger*. The Submarine Command comprised four squadrons – one based at Gosport, one at Devonport and two at Faslane. In addition, there were the Mine Countermeasures and Survey Flotillas.[2]

New construction underway in 1990 included nine Type 23 frigates (five of which were fitting out), two Vanguard-class Trident submarines, one Trafalgar-class fleet submarine, four Upholder-class patrol submarines (two of which were fitting out), and three Sandown-class MCMVs.

Personnel numbers totalled 63,400, including 56,340 Royal Navy and 7,000 Royal Marines. The voluntary reserve totalled 5,770 RN and 1,300 RM, whilst regular reserves totalled 25,040 RN and 2,820 RM, and the Royal Navy Auxiliary Service 3,010.[3]

The first half of the decade would see significant cuts to the Navy's fleet, and rationalisation of facilities. The July 1990 defence statement presaged reductions in the size of the Navy

Aircraft carriers	3	Fleet submarines	16	Ice patrol ship	1
Assault ships	2	Patrol submarines	10	Survey ships	3
Destroyers	13	MCM vessels	39	Survey vessels	4
Frigates	34	Patrol vessels	17	Royal yacht	1
Polaris submarines	4	Diving support ship	1		

by the mid-nineties, as part of the peace dividend. The number of nuclear-powered and conventional submarines would reduce from 27 to about 16, of which about 12 would be nuclear-powered. The number of destroyers and frigates would reduce from 48 to about 40. Personnel numbers would reduce from about 63,000 to about 60,000 (this was further reduced to 55,000 in the 1991 defence white paper). The numbers of aircraft carriers, assault ships and MCMVs would remain unchanged. As an immediate way of easing pressure on the defence budget several ships would be withdrawn prematurely.[4] These were the fleet submarine *Conqueror*, the patrol submarines *Odin* and *Onslaught*, the frigate *Phoebe*, the MCMVs *Gavinton* and *Kirkliston*, and the patrol ships *Sandpiper* and *Petrel*. The diving support ship *Challenger* would be decommissioned and sold.[5] In November 1990 it was announced that the refits of the fleet submarines *Warspite* and *Churchill* were being stopped and they would be decommissioned.[6]

In a sign of the thawing of relationship between the USSR and UK, the Soviet destroyer *Bezuprechny* made a five-day goodwill visit to Portsmouth in August 1990, the first by a Soviet warship for 14 years. The visit culminated in a concert given by the band and dancers of the Soviet Northern Fleet Squadron on the flight deck of *Invincible*.[7]

In February 1990 it was announced that Wrens (members of the Women's Royal Naval Service) would be employed at sea. The first ships to take Wrens would include the carriers *Invincible* and *Ark Royal*, the assault ship *Fearless*, and the frigates *Juno, Brilliant* and *Battleaxe*, which would all be modified to allow mixed manning. This would improve career opportunities for women and help relieve personnel shortages at sea. Similar arrangements would also be made in RFAs.[8] The first group of women to serve as full members of a ship's company, 14 junior ratings, joined *Brilliant* in October 1990.[9] The Women's Royal Naval Service was disbanded, and 4,535 women were integrated fully into the Royal Navy at all ranks and rates, including the Royal Marines Band.[10] In 1998 two women were appointed in command of Archer-class patrol boats, making them the first women to command British warships, and a female helicopter pilot gained her 'wings'.[11]

On 2 August 1990 a crisis erupted in the Middle East as Iraq invaded Kuwait. British warships were deployed to the area for patrols protecting British shipping and enforcing an embargo on Iraq-bound shipping. The destroyer *York* and RFA *Orangeleaf* were already present on the Armilla patrol. Two other ships of that patrol were summoned: *Battleaxe* being recalled from a visit to Penang, Malaysia, and the frigate *Jupiter* had to cut short a leave period in Mombasa (during which families had flown out from the UK), to deploy to the Persian Gulf. Three minehunters, *Atherstone*, *Hurworth* and *Cattistock*, sailed from Rosyth and were to be supported by the survey ship *Herald* and the new landing ship *Sir Galahad*, with the job of clearing any Iraqi mines. They were later joined by *Ledbury* and *Dulverton*. The RFA's *Olna* and *Fort Grange* sailed from the UK, and the forward repair ship RFA *Diligence* was directed to the Gulf from the Falkland Islands.[12]

They were joined in September by the destroyer *Gloucester* and frigates *Brazen* and *London* (flagship of the commodore) plus the destroyer *Cardiff* in October.[13] They relieved *York*, *Battleaxe* and *Jupiter*, which returned to the UK. The survey ship *Hecla* (joining *Herald* as an MCMV support ship) and the RFAs *Resource* and *Sir Tristram* were also sent to the Gulf. A United Nations embargo was enforced against Iraq, with allied ships stopping and boarding suspect vessels, as President Saddam Hussein increased his army of occupation to 670,000. In January 1991 the carrier *Ark Royal* led a task force including *Sheffield, Charybdis*, and the RFAs *Olmeda* and *Regent* to the eastern Mediterranean, where they operated with units of the US 6th Fleet, and *Manchester*, *Exeter*, *Brilliant* and

Brave comprised the next group of Armilla patrol ships. The RFA logistics landing ships *Sir Bedivere*, *Sir Tristram* and *Sir Percivale* provided transport for army units to the Gulf. RFA *Argus* was deployed as a primary casualty receiving ship and was equipped with a 100-bed hospital.[14]

On 15 January 1991 the UN-imposed deadline for Iraq to withdraw its troops from Kuwait passed without any compliance by Iraq, and the First Gulf War commenced. Operation *Desert Storm*, to liberate Kuwait, was launched by US and British forces two days later with massive air and missile attacks on Iraqi infrastructure. On the same day Lynx helicopters from *Gloucester*, *Cardiff* and *Brazen* launched Sea Skua air-to-surface missiles to destroy a group of 15 enemy surface craft. On 8 February helicopters from *Cardiff* and *Gloucester* attacked further Iraqi gunboats and patrol vessels, which led to the allies neutralising the Iraqi navy and gaining control of the waters of the northern Gulf. In all, the allies destroyed over 40 Iraqi vessels, varying in size from missile patrol boats and MCMVs down to many small patrol craft, and a frigate was put out of action. Iraqi mines drifting down the Gulf from the north were a constant threat: 228 mines were found by British minehunters, of which 133 were destroyed, opening up two vital sea lanes to Kuwait.[15] The patrol submarines *Opossum* and *Otus* undertook covert operations in the Persian Gulf, inserting special forces' reconnaissance teams to scout out the enemy's defences. On their return to Gosport they flew the Jolly Roger (which in submarines signifies successful war missions) and sported special tiger stripe camouflage paint schemes.[16]

On 23 February the US battleship *Missouri* (which was using her 16-inch guns for shore bombardment) was the target for two Silkworm missiles launched by the Iraqis in Kuwait. The first missile ditched into the sea but the second was destroyed by a Sea Dart missile from HMS *Gloucester*. Coalition forces entered Kuwait on the following day and advanced into Iraqi-held territory. Two days later the Iraqi forces were in full flight as they fled the country. On 3 March a formal ceasefire was agreed.[17] After the conflict the Armilla patrol continued in the Gulf.

On 22 November 1990 mistakes by the submarine *Trenchant*'s command team led to the sinking of the Scottish trawler *Antares* with the loss of its four-man crew. A report by the Marine Accident Investigation Branch found there had been 'a partial breakdown in the watchkeeping structure and standards' on board the submarine, and incorrect reports from *Trenchant* had led to an eight-and-a-half-hour delay in mounting a search and rescue operation 'which may have contributed to the loss of life'. The submarine snagged the trawler's nets in the Bute Sound, north of Arran when engaged in a submarine command training exercise, known as a Perisher course. *Antares* was pulled over, sinking in 150 metres of water.

Control of the submarine had passed from her captain to the captain of the command course, who was supervising the student being assessed, referred to in the report as the duty captain. The duty captain was about to hand over to another student, and surface vessels in the area were being detected by *Trenchant*'s passive sonar, but 'the command team had no clear appreciation of the surface contacts held on sonar during the period between the completion of the exercise and the collision.' Too much attention was being given to the position of the frigate *Charybdis*, taking part in the exercise, and the concentration of the duty captain was 'impaired due to his conversation with the next duty captain in the minutes before the collision'. *Trenchant* did not surface at first, and when it did, 43 minutes after hearing banging noises, it found two vessels fishing normally, the officers on board the submarine concluding that there were only two boats and they were both fine. When it was noted the following morning that the *Antares* was missing, a full-scale search and rescue operation was launched, and the wreck was soon found. Attempts by *Trenchant* to establish contact with fishing boats after it surfaced were 'not adequate', the submarine having resumed its exercise with 'a lack of appreciation of the reality of the situation.' A court martial reprimanded the student officer in charge of *Trenchant*.[18]

The 1991 defence white paper announced that the naval air station at Lee-on-Solent, HMS *Daedalus*, would close by 1996, and the Gunwharf, Portsmouth, site of HMS *Nelson* (formerly HMS *Vernon*) would close and be sold in 1995, with the minehunter (MCMV) base being transferred to No. 2 Basin, Portsmouth Naval Base. Also, there would be a 20 per cent

reduction in Royal Naval Reserve personnel and two of the RNR's River-class minesweepers would pay off.[19] HMS *Dolphin*, Gosport, would cease to be a submarine base by 1993, by which time the remaining Oberon-class boats would have paid off, and its Upholder-class boats would transfer to Devonport. *Dolphin*'s Fort Blockhouse site would become home to the Mine Warfare School, Fleet Diving Group, Royal Engineers Diving Establishment and Portsmouth Area Clearance Diving Unit, which would transfer from the Gunwharf site.[20]

In April 1992 a new command structure for the Navy was introduced, replacing the three surface flotillas, which each had had a flag officer. The new Flag Officer Surface Flotilla (a vice admiral, who would be based at Portsmouth) would be responsible to the C-in-C Fleet for all major surface vessels, survey ships and RFA *Argus*, and would also be Commander Anti-Submarine Warfare Striking Force. The new post of Commander UK Task Group, a rear admiral based at Plymouth, would be responsible for the on-call UK Task Group and any out-of-area task groups (a major overseas task group deployment was still carried out in most years). The Commodore Amphibious Warfare would report to him. The posts of Flag Officer Submarines, Flag Officer Naval Aviation and Commodore Minor Surface Vessels and Mine Warfare would remain unchanged.[21]

Phased voluntary redundancies were being introduced to help achieve the planned reduction in personnel numbers. This involved, in 1992, 80 officers and 320 ratings, and, in 1993, 450 officers and 700 ratings. The newly refitted frigate *Andromeda* was to be sealed and dehumidified, and placed in reserve. Meanwhile her sister ships *Argonaut*, *Scylla* and *Sirius* all paid off for the last time in the spring of 1993.[22]

In November 1992 it was announced that Portland Naval Base would close, with its Operational Sea Training activities moved to Devonport. This transfer would take place as soon as facilities were in place at Devonport, and by April 1996 at the latest. Some 500 civilian jobs would be 'affected'. In 1991–92 43 Royal Navy warships, 17 RFAs and 12 other NATO warships undertook periods of operational sea training at Portland. The Royal Navy Air Station at Portland would remain open. There would be further reductions to the capacity and personnel numbers at the Fleet Repair and Maintenance Organisation in Portsmouth Naval Base. Refits would no longer take place there, so work would be limited to docking and essential defect periods, assisted maintenance periods, emergency repairs and, where appropriate, enhancements. Some 400 civilian jobs would be lost.[23]

Better news came in May 1993 with the ordering from VSEL Barrow of a new helicopter carrier, to be named *Ocean*.[24] The ship would plug a gap by providing a dedicated helicopter carrier for amphibious operations for the first time since 1976, when *Bulwark* had paid off from her role as a commando carrier and *Hermes* had been repurposed as an anti-submarine carrier. But more cuts were presaged by the announcement in the following month that the Royal Naval Reserve was to be cut by 25 per cent and would lose all of its River-class minesweepers, which had been designed to clear deep-moored Soviet mines, and the Royal Naval Auxiliary Service[25, 26] would be disbanded.[27] This was soon followed by the news in July that destroyer and frigate numbers were to be reduced to 35 and that the new Upholder-class conventional submarines – the last of which, *Unicorn*, was only just being commissioned – would be withdrawn by 1995. It was said that reduced Soviet submarine operations meant there was no need for them in their designated task of covering the Greenland–Iceland gap.[28]

In October 1992 the aviation support ship *Argus*, with four Sea King helicopters embarked, sailed with RFAs *Resource* and *Sir Bedivere* (later relieved by *Sir Percivale*) for the Adriatic to support the British forces engaged ashore with the United Nations Protection Force in the former Yugoslavia, after the start of the Balkan civil war. They were based in Split.[29]

At least one British frigate or destroyer was deployed with the standing NATO force engaged in the monitoring and interdiction of merchant shipping to enforce the United Nations embargo. Until June 1996 Royal Navy ships and auxiliaries were heavily committed to these operations in the Adriatic in support of what was a growing British contingent in the humanitarian and peace-keeping forces. As the situation escalated in early 1993, with reports of rape and slaughter by Bosnian Serbs involved in ethnic cleansing, a task group led by *Ark Royal* sailed from the UK on

14 January, including the frigates *Coventry* and *Brilliant*, and RFA *Olwen*. It joined American and French task groups, and carried out flying missions over southern Bosnia. In late July *Invincible*, escorted by *Edinburgh*, *Boxer* and *Beaver*, plus RFAs *Olwen* and *Fort George*, relieved *Ark Royal*'s group.[30]

Ark Royal's second tour in the Adriatic began in February 1994 when her task group relieved *Invincible*'s. Her Sea Harriers, which were flying up to 14 sorties a day, shot down four Serb fighter-bomber aircraft which were launching ground attacks. In March three landing ships, *Sir Tristram*, *Sir Galahad* and *Sir Bedivere*, transported extra troops and vehicles to the region. In April two Sea Harriers attacked Serbian tanks which were engaging UN forces. One of them was shot down over Goradzw by a surface-to-air missile, but fortunately the pilot ejected and was later rescued.

Invincible relieved *Ark Royal* in late August, and was supported by the frigates *Brave*, *Brilliant*, *Campbeltown*, *Coventry* and *Cumberland*, plus RFAs *Fort Grange*, *Fort Austin* and *Olna*. Further air strikes against Serb positions were carried out in November during which two Sea Harriers evaded missile attacks. *Illustrious* relieved *Invincible* in February 1995 and was in turn relieved by *Invincible* in May. In September an intensive bombing campaign against the Serbs was conducted by Sea Harriers and US strike aircraft from their carriers. This campaign was successful and the Serbs pulled back their heavy guns and mortars. On 21 November a Bosnian peace settlement was accepted. *Illustrious* then relieved *Invincible* as maritime forces continued to be deployed in the Adriatic.[31]

In the Gulf, ships continued to be employed on the Armilla patrol, normally with two frigates or destroyers plus, for some of the time, a submarine.

In 1994 the Royal Naval Reserve lost its mine warfare role, and its remaining nine River-class minesweepers were paid off (two having already paid off in 1991) or, in the case of five vessels, transferred to other RN duties. Thereafter the RNR was used as a pool of personnel to provide additional reinforcements for the fleet, mainly in the roles of logistics and communications, though mine warfare, seaman and diving roles were revived during the Second Gulf War.[32]

Cuts of 2,400 RN personnel were announced in December 1994, to be effected in 1996. In the event almost 90 per cent of the redundancies were voluntary. It was also announced that the naval staff college at Greenwich would close. The Army Staff College at Camberley would become a Joint Services Staff College.[33]

On 7 November 1995 the last ships based at Rosyth, the minehunters of the 3rd MCM Squadron and the Isles-class patrol vessels of the Fishery Protection Squadron, left the naval base for the final time, and the naval base closed in March 1996 after 86 years of activity. The 3rd MCM Squadron was henceforth to be based at Faslane and the FPS at Portsmouth.[34]

Vanguard, the first Trident submarine, which had been commissioned in August 1993, commenced her first patrol in 1995. In January 1996 *Victorious* joined the patrol cycle and Polaris was retired.[35] *Renown* and *Repulse*, the last Polaris submarines, paid off, and thus the deployment of the deterrent was wholly with the new Vanguard-class submarines.

In January 1997 the locally enlisted Chinese sailors of the naval base HMS *Tamar*, Hong Kong, and the patrol vessels *Peacock* and *Plover* took part in their last divisions. Locally enlisted sailors had served at Hong Kong since 1842. A time capsule, which had commemorated the laying of the foundation stone of the dockyard at Hong Kong in 1902, was opened. The patrol ships *Peacock*, *Plover* and *Starling* would stay in Hong Kong waters until the handover of the colony on 30 June, after which they were sold to the Philippines Navy (*Swift* and *Swallow* having been sold to the Irish Navy in 1988).[36] In Hong Kong for the handover ceremony were the frigate *Chatham*, the three patrol vessels of the Hong Kong Squadron, the royal yacht *Britannia*, and RFA *Sir Percivale*, which was loading equipment to be taken back to the UK. They all sailed together from the harbour in the early hours of 1 July to meet up with the Ocean Wave task group, which was over the horizon in the South China Sea. Other ships of the task group that had deployed to the Far East included the aircraft carrier *Illustrious*, assault ship *Fearless*, submarine *Trafalgar*, frigates *Beaver* and *Richmond*, and RFAs *Fort George*, *Fort Austin*, *Olna*, *Sir Geraint*, *Sir Galahad* and *Diligence*.[37] This was something of a last hurrah for

Britannia. After her return to Portsmouth, on 1 August, she sailed on 20 October for a round-Britain tour, finally paying off at Portsmouth on 11 December 1997.[38] The Conservative government had agreed that a replacement would be built, to enter service by 2002. However, after a general election on 1 May 1997 the new Labour government cancelled this project.

In January 1998 *Invincible* (with RFA *Fort Victoria*) made an emergency deployment to the Gulf, where a crisis was developing as Iraq's Saddam Hussein was obstructing United Nations weapons inspectors. There they joined *Coventry* and *Nottingham*, the ships of the Armilla patrol, and were soon augmented by three MCMVs. A second task group, led by *Illustrious*, was sent to the Mediterranean, and then relieved the *Invincible* group in March, until leaving the Gulf on 17 April.

In August 1998 an International Festival of the Sea was held at Portsmouth, replacing the traditional Navy Days and combining both British and foreign warships with tall ships to create a more spectacular event. The Royal Navy was represented by the aircraft carrier *Invincible*, assault ship *Fearless*, destroyers *Birmingham*, *Liverpool*, *Manchester* and *Nottingham* and the frigates *Iron Duke* and *Marlborough*, plus smaller ships.[39] Its success would lead to two more such festivals in the next decade.

In April 1999 *Invincible* was again in action in the Mediterranean, as part of a NATO task force which aimed to deter Serbian ethnic cleansing in Kosovo. In the Adriatic the attack submarine *Splendid* had fired the opening salvos with Tomahawk cruise missiles, to knock out Serbian air defences, and the frigate *Somerset* acted as a radar picket for French forces. She was later replaced by her sister ship *Grafton*, and the attack submarine *Turbulent* was also in the area. Meanwhile the frigate *Iron Duke* spent six months in the operation, often deployed close to the coast. *Invincible*, supported by RFA *Bayleaf*, was ordered to the Ionian Sea on 10 April to join a US carrier battle group, whilst on passage home from the Gulf. Her Sea Harriers of 800 NAS were employed in a defensive counter-air role, flying over 300 hours on missions in the area, during which they experienced 'quite serious anti-aircraft fire', according to one of the pilots. *Invincible* left the area on 21 May, by which time the number of NATO aircraft in the operation was sufficient to conduct all missions.[40] It was later revealed that more than half of the missiles carried by the Sea Harriers were unserviceable within just two months because of heat and vibration problems, and nearly half of the planes depended on spares 'robbed' from other aircraft.[41]

LEFT • HMS *INVINCIBLE*
A Sea Harrier is launched from *Invincible* in 1998. In the 1990s the carrier had undertaken three tours of duty in the Adriatic during the Balkan civil war, enforcing a no-fly zone over Bosnia and supporting British troops ashore with the United Nations peacekeeping and humanitarian force. The first tour lasted from July 1993 until February 1994, the second from August 1994 to February 1995. During her third tour (from May to November 1995) her Sea Harriers of 800 Naval Air Squadron flew 24 bombing sorties and 28 reconnaissance missions. In January 1997 she was presented with the Wilkinson Sword of Peace, jointly with Illustrious, by the Prince of Wales for their operations in the Adriatic. In June 1999 Invincible entered Portsmouth Dockyard for a major refit that would see her Sea Dart missile system removed and the flight deck extended, as well as being fitted with updated sensors and communications systems. (Author's collection)

ABOVE • HMS *CHATHAM*
Chatham was the last of four batch 3 Type 22 frigates to enter service, commissioning on 4 May 1990, having been built by Yarrow Shipbuilders, Scotstoun. This batch incorporated lessons from the Falklands conflict and differed from the earlier Type 22s in having a 4.5-inch gun, which was mounted on the foredeck, a Goalkeeper close-in weapon system and an eight-barrelled Harpoon anti-ship missile launcher behind the bridge. They were equipped with the new Spey rather than Olympus gas turbines, and all the ships had command facilities. In 1993 *Chatham* joined ships in the Adriatic enforcing the embargo against the former Yugoslavia after the start of the Balkan civil war, and on 1 May 1994 she and a Dutch frigate captured the Maltese freighter *Lido II*, which was suspected of smuggling fuel to Montenegro. Three Yugoslav missile boats challenged this operation and one of them attempted to ram *Chatham*, but they were driven off by the frigate, supported by Italian Tornado aircraft. (Author's collection)

ABOVE • HMS *EDINBURGH*
Edinburgh was a batch 3 Type 42 destroyer built by Cammell Laird, Birkenhead, and commissioned on 17 December1985. Earlier Type 42s had shown a need for better seakeeping qualities, so the four Batch 3 ships had larger hulls – with 42ft added to the length and 2ft to the beam. This also increased speed and allowed more space for improved weapon systems and accommodation. The hull was stiffened by fitting a beam at main deck level on either side of the ship. Modifications to the design from Falklands War experience were incorporated, notably new damage control arrangements and, in 1990, one (later two) Phalanx close-in weapon systems were fitted. *Edinburgh* is seen leaving Portsmouth with her crew standing at Procedure Alpha, the drill when entering or leaving harbour. She was distinctive in having a raised bulwark on the forecastle to help protect the Phalanx fitted between the gun and missile launcher. She was finally decommissioned on 6 June 2013, having been the last Type 42 in service. (J&G Ship & Maritime Photographic Collection)

RIGHT • HMS *CHALLENGER*
The July 1990 defence statement announced that the diving support ship *Challenger* would be decommissioned and sold, amongst other cuts to the Navy as part of the 'peace dividend'. Built by Scotts, Greenock, and commissioned on 20 August 1984, she was designed to support deep sea diving operations. She was equipped with a diving bell (or submerged recompression chamber), lowered from the well amidships with a crane which could also recover objects from the seabed, a towed unmanned submersible, for stern launching, and could carry and deploy a submarine rescue submersible. In 1985–86 she was refitted and equipped with a saturation diving system, providing accommodation for 12 divers in two pressurised chambers. Three men at a time were transferred under pressure to the diving chamber and lowered to the target area. She is shown here in August 1984 manoeuvring for flying operations with her stern towing gantry lowered to clear the flight deck. (Michael Lennon)

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LEFT • RFA *OLNA*
The fast fleet replenishment tanker *Olna* arrived Jebel Ali, 9 September 1990, to join the 'tanker towline' supporting ships of the RN and the multinational force, following the invasion of Kuwait. By 22 October 1990 she had completed her 50th Gulf War replenishment at sea. In December she was detached to Singapore for long overdue maintenance and returned to the Southern Gulf in mid-January 1991. In February 1991, with the task group operating in the northern end of the Gulf, she, along with RFA's *Argus* and *Diligence*, was brought forward to the vicinity of the D'horra Oilfield. By then, following the mining of USS's *Princetown* and *Tripoli*, the Americans were unwilling to risk deploying their supply ships in the northern Gulf, so *Olna*'s services were offered to the USN and were gratefully accepted. Capable of operating three Sea King helicopters with full hangar facilities, *Olna* had been completed in 1966 by Hawthorn Leslie, Hebburn, and was finally withdrawn from service in September 2000. (Mike Welfare)

ABOVE • HMS *GLOUCESTER*
The 'stretched' Batch 3 Type 42 destroyer *Gloucester* was built by Vosper Thornycroft, Southampton, and commissioned in 1985. In 1991 she was engaged in the First Gulf War off Kuwait. Lynx helicopters from *Gloucester*, *Cardiff* and *Brazen* launched Sea Skua air-to-surface missiles to destroy a group of 15 enemy surface craft. Later, helicopters from *Cardiff* and *Gloucester* attacked further Iraqi gunboats and patrol vessels, which led to the allies neutralising the Iraqi navy and gaining control of the waters of the northern Gulf. One of two Sea Dart missiles fired by *Gloucester* shot down an Iraqi Silkworm missile targeted at the battleship USS *Missouri*. Although *Missouri* and USS *Jarrett* had fired chaff *Gloucester* chose not to, so that it did not interfere with her ability to target the incoming missile. The interception range was between three and four miles at a height estimated by *London* to be 680-1000 ft. *Gloucester* spent the longest period in the combat area of any coalition warship. (© IWM CT 294)

ABOVE • HMS *BRAVE*
The Type 22 (Batch 2) frigate *Brave* seen off Kuwait during the 1991 Gulf War. In January 1991 she had been deployed there for Operation *Desert Storm* – the liberation of Kuwait – and from early March acted as the flagship for the Senior Naval Officer Middle East, commander of the British sea-based task group, relieving her sister ship *London* in that role. Her duties included providing anti-missile defence for US aircraft carriers and battleships, sonar tasks and mine watching. On several occasions she spotted mines which had been laid by the Iraqi military and were subsequently destroyed. She had been built by Yarrow, Scotstoun, and commissioned at Portsmouth on 4 July 1986. She was finally decommissioned on 23 March 1999. No overseas navy buyer could be found for her, and she was eventually sunk as a target by the submarine *Sceptre* and frigate *Argyll* in August 2004. (© IWM GLF 503)

RIGHT • HMS *OPOSSUM*
The Oberon-class submarines *Opossum* and *Otus* undertook covert operations in the Persian Gulf during the First Gulf War, inserting special forces' reconnaissance teams to scout out the enemy's defences. On their return to Gosport they flew the Jolly Roger (which in submarines signifies successful war missions) and sported special tiger stripe camouflage paint schemes in duck egg blue and black. *Opossum* is seen here approaching her base, HMS *Dolphin*, in Haslar Creek, Gosport, on her return in April 1991, completing a rare round-the-world deployment which took in Pitcairn Island, where she had joined events marking the 200th anniversary of the *Bounty* mutineers' settlement. Whilst *Otus* was then paid off, *Opossum* continued in service. She had been built by Cammell Laird, Birkenhead – laid down on 21 December1961, launched on 23 May 1963 and commissioned on 5 June 1964, the 11th of her class. She was paid off in September 1993, the last Oberon in service. (Michael Lennon)

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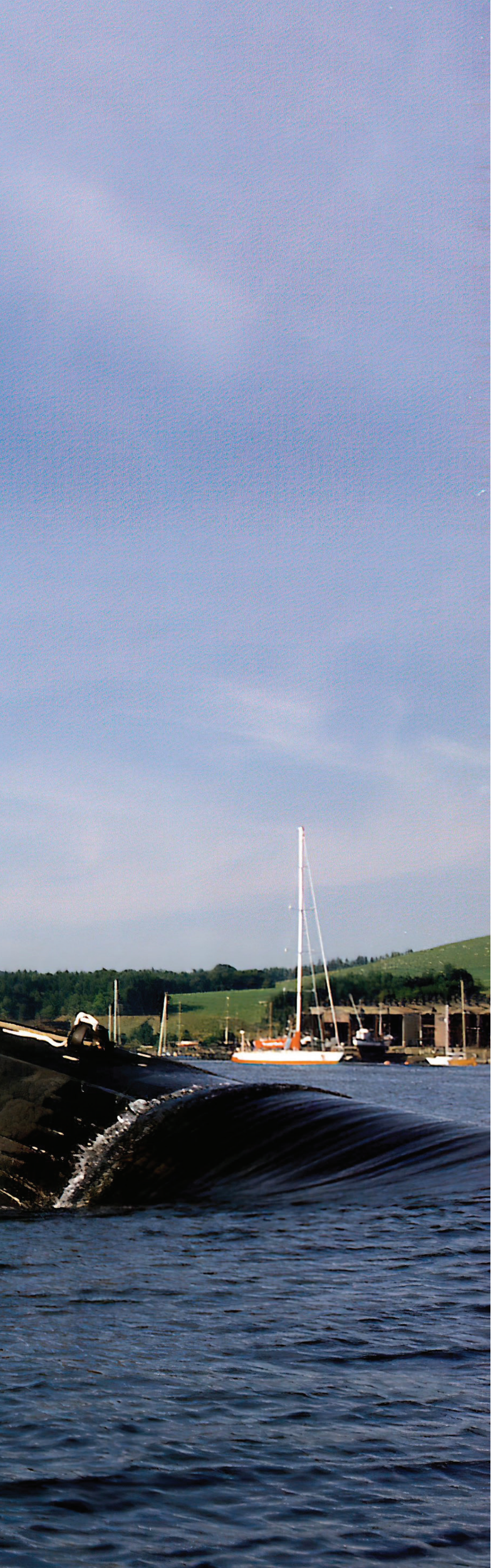
LEFT • HMS *CHARYBDIS*
In 1990 *Charybdis* was on the Armilla patrol and was due to visit America and the Falklands in 1991 but was retasked to the eastern Mediterranean to provide Sea Wolf air-defence for *Ark Royal* during the First Gulf War. She was a broad-beamed Leander-class frigate built by Harland & Wolff, Belfast, and commissioned on 2 June 1969. In July 1982 she completed a modernisation in Devonport Dockyard, gaining Exocet and Sea Wolf missile systems in place of her 4.5-inch guns, Limbo mortar and Seacat missile system. She was also fitted with a shipborne torpedo weapon system with two triple launchers, improved sonar, a larger hangar to accommodate a Lynx helicopter, two 20mm Oerlikon guns, a new mainmast and a flat-topped funnel. She was the second Leander to receive this treatment, the first having been *Andromeda*. The last Leanders were paid off in the early nineties, *Charybdis* being decommissioned in September 1991. She was sunk as a target off Benbecula on 11 June 1993. (Crown Copyright/OGL)

ABOVE • HMS *SWIFTSURE*
The name ship of her class, the nuclear-powered submarine *Swiftsure* was the first boat of that class to be decommissioned – in 1992. This was premature, since she should have continued in service for another ten years, and was believed to be due to cracks being found in her nuclear reactor. She had been ordered from Vickers-Armstrongs, Barrow on 3 November 1967, and commissioned on 17 April 1973. In one notable incident she had reportedly acquired the acoustic signature of the Soviet aircraft carrier *Kiev* in the Barents Sea, amid an enormous Russian naval exercise with ships blasting off rockets and torpedoes in all directions. Upon locating a new unique acoustic sound that indicated the *Kiev*'s presence, *Swiftsure* managed to slide under the *Kiev* and hid there for several hours, with her raised periscope just ten feet under the aircraft carrier's hull, allowing the crew to take photos and record the ship's acoustic signature. (Crown Copyright/OGL)



LEFT • HMS *TRIUMPH*
The Trafalgar-class submarine *Triumph* seen in the Clyde area in February 1992. She had been built by Vickers Shipbuilding & Engineering Ltd, Barrow, and commissioned on 2 October 1991, the seventh and last of her class to enter service. She sailed to Australia in 1993, travelling 41,000 miles (66,000 km) submerged without support – at that time the longest solo deployment by a Royal Navy submarine. During Operation *Veritas*, in October 2001, *Triumph* launched Tomahawk missiles at targets inside Afghanistan. When she returned to Devonport she flew the Jolly Roger, the traditional way of indicating that live weapons had been successfully fired by a submarine. In March 2011 she fired six Tomahawks at Libyan air defence targets. One of these hit a command-and-control centre in Colonel Gaddafi's presidential compound. *Triumph* returned to Devonport on 3 April 2011, again flying the Jolly Roger. Following the Integrated Review of 2020, her service life was extended by 18 months, and was expected to continue until the end of 2024. (Crown Copyright/OGL)

ABOVE • HMS *ENDURANCE*
The ice patrol ship *Endurance* was chartered by the MoD in 1991 and commissioned as HMS *Polar Circle*, thus retaining the name she had in commercial service. On 21 November 1992 she was bought outright and renamed *Endurance*. She had been built by Ulstein Hatlo, Helsinki, and completed in 1990. In the RN she deployed annually to the Antarctic and South Atlantic for seven months and carried out hydrographic work, supported the international community in Antarctica and maintained a UK presence in the region. She was equipped with two inshore survey motorboats and two ice-modified Lynx helicopters, and embarked a Royal Marine detachment, all of whom were trained in survival techniques in arctic conditions. She was laid up in Portsmouth from 2009 to 2016, following serious flood damage to her engine room and lower accommodation decks, caused by an error during routine maintenance on a sea suction strainer, and was then sold for breaking up in Turkey. (J&G Ship & Maritime Photographic Collection)

ABOVE • HMS *BATTLEAXE*
The Type 22 frigate *Battleaxe*, seen entering Portsmouth harbour in October 1992. She was built by Yarrow, Scotstoun, and commissioned on 28 March 1980, the second of Batch 1 of her class. Although, like *Broadsword* and *Brilliant*, she was involved in Exercise *Springtrain 82* off Gibraltar, she was unable to head south with them and hence missed the Falklands War, due to problems with her propeller shafts. Eventually she escorted *Illustrious* to the region in August 1982, after the end of the conflict. When in August 1990 Iraq invaded Kuwait, *Battleaxe* was recalled from a visit to Penang, Malaysia, to join other British warships deployed to protect British shipping and enforce an embargo on Iraq-bound shipping during the First Gulf War. She was decommissioned on 30 August 1996 and was sold to Brazil in 1997, joining the other three Batch 1 Type 22s that had already been sold to that navy.
(© NMRN)

RIGHT • HMS *VANGUARD*
The first-of-class Trident submarine, *Vanguard*, arrives in Gareloch for the first time, on 25 October 1992. Her class was built to replace the Resolution-class Polaris missile-armed submarines, providing the UK's strategic nuclear deterrent. The Vanguards were nearly twice the size of the Resolutions, displacing nearly 16,000 tonnes when dived. Each boat was allocated two crews, known as Port and Starboard, to allow for reliefs, leave and training. The 1998 Strategic Defence Review set out a new operating regime for the boats, which would operate at reduced readiness states and would routinely be at several days' notice to fire rather than the few minutes required during the Cold War. Thereafter she carried 48 Trident missiles for her 16 missile launchers. *Vanguard* had been ordered from Vickers Shipbuilding & Engineering, Barrow, on 3 May 1986, laid down on 3 September of that year, launched on 4 March 1992 and was commissioned on 14 August 1993.
(Crown Copyright/OGL)

ABOVE • HMS *ROEBUCK*
Roebuck (pictured in March 1993) was ordered on 14 November 1985 from Brooke Marine, Lowestoft, as an improved version of the Bulldog-class coastal survey vessel. Commissioned in 1986, she was designed to operate up to the UK continental shelf undertaking hydrographic surveys to update Admiralty charts, but with the downsizing of the survey fleet, was enhanced to enable her to operate worldwide on hydrographic and oceanographic survey operations. She carried a 9m survey motorboat which was fitted with similar sonar suites to the mother ship. She also functioned as a support ship for mine countermeasures vessels in the Persian Gulf, as well as conducting inshore survey work, prior to and during the Second Gulf War, and was the first RN ship into Umm Qasr port when hostilities ended. She was decommissioned on 15 April 2010 and sold to the Bangladeshi Navy. (© NMRN)

ABOVE • HMS *WALNEY*
Walney was one of a batch of four Sandown-class minehunters ordered from Vosper Thornycroft, Woolston, in 1987. She was commissioned on 20 February 1993. Twelve of the GRP hulled class were built, as single role minehunters, providing a cheaper alternative to the Hunt class. They were equipped with two remote controlled submersibles for mine disposal with a 100kg mine disposal charge, controlled via a 2,000m fibre-optic cable. Wire cutters were used to release moored mines from the seabed. The mine disposal vehicles could be deployed to a depth of 300m. Also, mine clearance divers, who placed explosive charges on mines, were part of the ship's company. Their bow thrusters and Voith Schneider propellers made the Sandowns highly manoeuvrable, and the electric drive gave a quiet, slow speed of six knots when minehunting. *Walney* was decommissioned at her base, Faslane, on 15 October 2010. Before disposal she was stripped of her engines and much of her equipment at Portsmouth, to supply spares for others of the class. (Paul Brown)

ABOVE • Sea Harriers from HMS *INVINCIBLE*
Sea Harriers from the aircraft carrier *Invincible* in flight over the Adriatic during Operation *Grapple*, the British military deployment in support of the United Nations peacekeeping force in Bosnia. *Invincible* had sailed for the Adriatic on 22 July 1993 to relieve *Ark Royal*. She remained in theatre until February 1994, with 800, 814, 846 and 849A Naval Air Squadrons embarked. On 20 September 1993 the ship hosted unsuccessful 'warring parties' peace talks, involving Lord Owen and Jens Stoltenburg, NATO secretary-general, as mediators. *Invincible* returned to the Adriatic from August 1994 to February 1995 and again entered the theatre in May 1995. In September an intensive bombing campaign against the Serbs was conducted by Sea Harriers from *Invincible* and US strike aircraft from their carriers. This campaign was successful, and the Serbs pulled back their heavy guns and mortars. On 21 November 1995 a Bosnian peace settlement was accepted. (© IWM HU 92567)

RIGHT • HMS *UNICORN*
The Upholder-class submarines were ordered by the RN as replacements for the Oberon class. *Unicorn* was the last of the four boats to be completed, having been built by Vickers, Barrow, and commissioned on 25 June 1993. Her service life in the Royal Navy was very short, the class being declared surplus to requirements as part of the post-Cold War 'peace dividend' in the 1992 defence review. Nevertheless, she completed a six-month deployment East of Suez, with operations and exercises in the Mediterranean, the Gulf of Oman, Indian Ocean and Persian Gulf. When she dived for the last time on 16 October 1994 it was also the last dive by a 'conventional' (diesel-electric) submarine in the Royal Navy. Later that day she returned to Devonport to pay off. The four Upholder-class boats were laid up at Barrow and in 1998 it was announced that they were to be transferred to the Canadian Navy under a lease-to-purchase agreement. (Mike Welfare)

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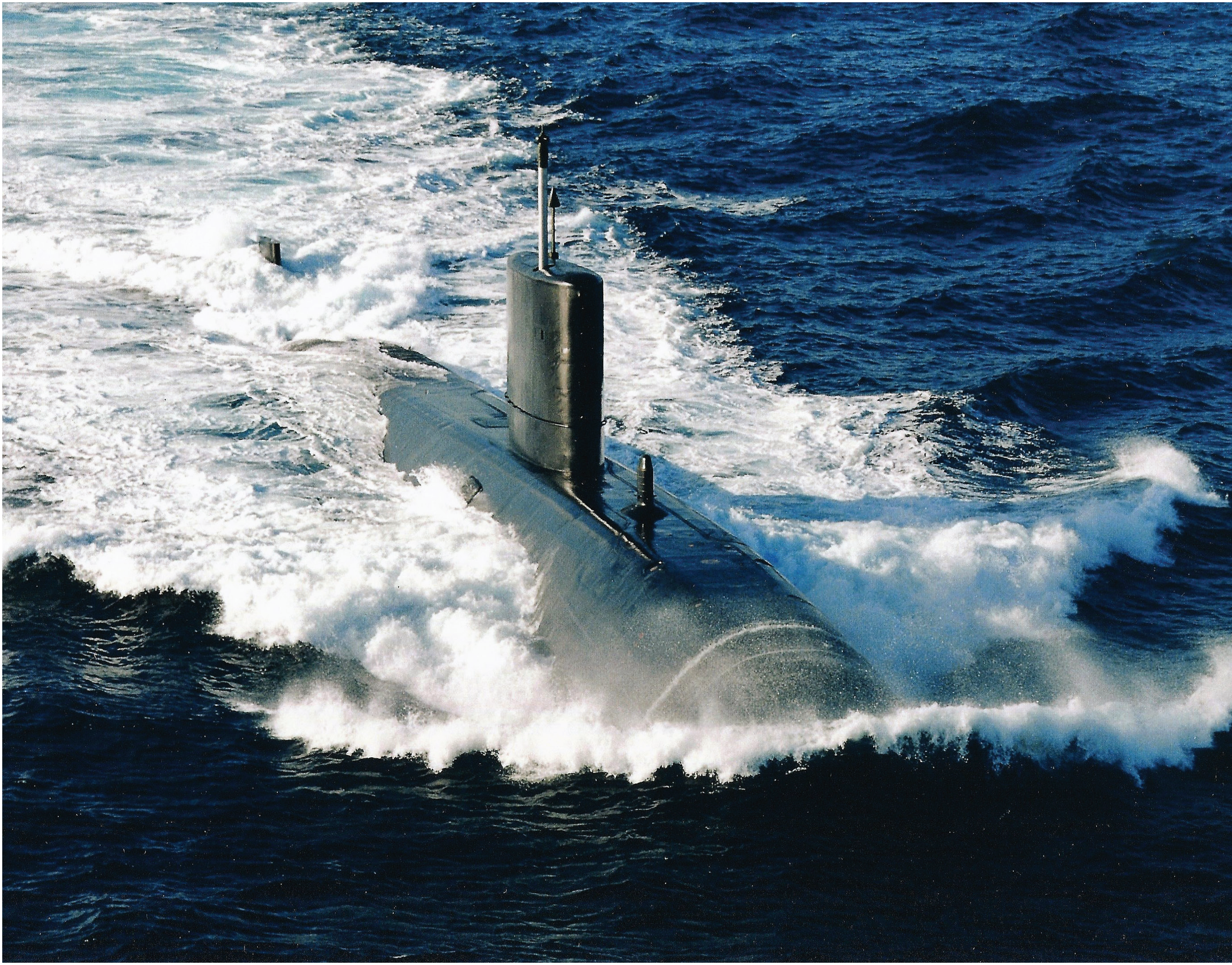
LEFT • HMS *ACTIVE*
The Type 21 frigates were considered to be unsuitable for modernisation due to their size and design, which offered little scope for additional equipment, so plans to equip them with Sea Wolf and towed array sonar were dropped. By the nineties they were little changed from their original outfit and the six surviving ships were sold to the Pakistani Navy. Seen here, *Active* was built by Vosper Thornycroft, Woolston, and commissioned on 17 June 1977. She sailed with the *Bristol* group to the Falklands and entered the amphibious operating area on 26 May 1982. She was then employed escorting ships in and out of San Carlos Water, and overnight naval gunfire support operations at Bluff Cove, Fitzroy, Berkeley Sound, Mount Tumbledown, and Port Stanley – firing 633 rounds from her 4.5-inch gun. In September 1988, supported by RFA *Oakleaf*, she provided emergency relief to the hurricane-struck Cayman Islands and Jamaica. She was decommissioned on 23 September 1994. (Author's collection)

ABOVE • HMS *ORWELL*
Twelve steel-hulled River-class minesweepers were built in the eighties and 11, forming the 10th Mine Countermeasures Squadron, were allocated to Royal Naval Reserve (RNR) divisions. They were intended for deep-sea sweeping of Soviet-laid mines, towing a sweep along the seabed between two of the ships to cut the mooring wires and release the mines, which would then be destroyed on the surface with gunfire. *Orwell*, seen here, was built by Richards, Great Yarmouth, and commissioned on 7 February 1985 for the Tyne Division RNR. In 1994–95 the Rivers, two of which were already laid up, paid off from RNR service when that service was cut by 25 per cent. Four were then allocated to the Northern Ireland Squadron, whilst *Orwell* became a training ship for the Britannia Royal Naval College, Dartmouth. From 1998 she was the only ship of the class remaining in service, until paying off in 2001. All of the class were sold to overseas navies. (J&G Ship & Maritime Photographic Collection)

ABOVE • HMS *LIVERPOOL*
The Type 42 destroyer *Liverpool*, seen in May 1995, was built by Cammell Laird, Birkenhead, launched on 25 September 1980 and completed on 1 July 1982, just too late to serve in the Falklands War. On 26 May 1993 she was part of the 26-strong warship contingent, together with seven merchant ships, at the Battle of the Atlantic 50th Anniversary Fleet Review, off Anglesey. The night of 25/26 May had seen force eight winds which had forced eight small warships to withdraw from the anchorage. In July 1995, after the eruption of a volcano in the Chances Peak area of the Soufrière Hills on the island of Monserrat, a British Overseas Territory, in which 19 people died, *Liverpool* played a vital role in the evacuation of 7,000 civilians to nearby islands by ship, the airport having been destroyed. She finally paid off at Portsmouth on 30 March 2012, having been the last 'short' Type 42 in service. (© NMRN)

RIGHT • HMS *TURBULENT*
The second Trafalgar-class submarine, *Turbulent*, at sea. She had been built by Vickers Shipbuilding & Engineering, Barrow, and commissioned on 28 April 1984, the seventh and last of her class to enter service. In 1997, like other Trafalgar-class boats in the late nineties, she was equipped to fire Spearfish torpedoes and Tomahawk cruise missiles, augmenting her Sub-Harpoon anti-ship missiles. In 2003 she took part in the invasion of Iraq, firing 30 Tomahawks. On 16 April 2003 she was the first Royal Navy vessel to return home from the war, when she arrived at Devonport flying the Jolly Roger. In 2011 she was again in action, during Operation *Ellamy*, the Libyan intervention, and fired Tomahawks at regime land targets. She was the last vessel home from that operation when she berthed at Devonport on 14 December2011 after a 284-day deployment, 190 days of which were spent submerged. She was finally decommissioned on 14 July 2012 after 28 years' service. (Author's collection)



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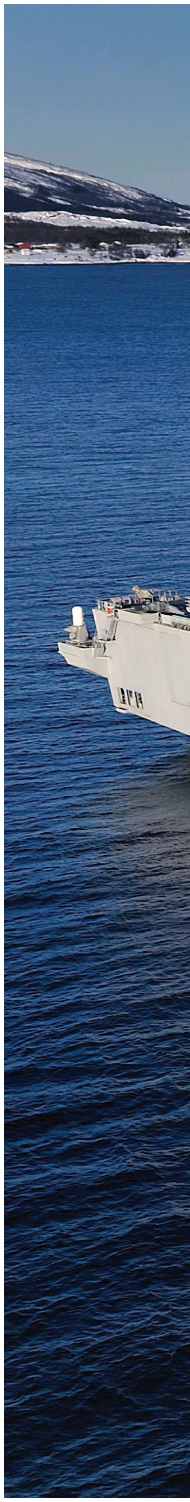
LEFT • HMS *MIDDLETON*
The Hunt-class mine countermeasures vessel *Middleton* is pictured on the Forth in March 1997. She was built by Yarrow, Glasgow, and entered service in June 1984. Vessels of her class were, at the time, the largest warships ever constructed of glass reinforced plastic. Although originally built as dual-purpose minesweepers and minehunters they were reconfigured to function only in the minehunter role. As minehunters they located mines with a high-definition sonar and then destroyed them using explosives placed either by their mine clearance divers or by the Sea Fox mine disposal system that the ships carried. They were equipped with a single 30mm gun, two miniguns and three general purpose machine guns, enabling them to function in a secondary role as patrol vessels. *Middleton* was deployed to the Persian Gulf (otherwise known as the Arabian Gulf) for three three-year deployments commencing 2009, 2015 and 2021 respectively, as part of the 9th Mine Countermeasures Squadron operating out of Bahrain. (Crown Copyright/OGL)

ABOVE • HMY *BRITANNIA*
The royal yacht *Britannia* arriving at Portsmouth for the last time, on 22 November 1997, completing a clockwise circumnavigation of the UK in which she visited eight major ports. On 10 October it had been announced by the new Labour government that no replacement would be built for her because the construction and operating costs were prohibitive. She was built by John Brown, Clydebank, and since commissioning on 11 January 1954, had steamed more than one million nautical miles and carried members of the royal family on 968 official visits, calling at more than 600 ports in 135 countries. Her demise signalled the end of an unbroken succession of royal yachts dating back to Charles II. She became a museum ship at Leith, opening to the public in October 1998. In May 2021 the Conservative government announced that a new 'national flagship' would be built as a successor to *Britannia*. The Labour leader Sir Keir Starmer labelled it a 'vanity yacht.' (Author's collection)



ABOVE • HMS *MARLBOROUGH*
The Type 23 frigate *Marlborough*, seen in April 1998. She was the third ship of the class, having been built by Swan Hunter, Wallsend, and commissioned on 14 June 1991. The Type 23's powerful weapons outfit was a result of lessons from the Falklands conflict, which had exposed the vulnerability of escorts. It included a 4.5-inch gun for air and surface targets, Sea Wolf anti-air missiles, Harpoon anti-ship missiles, Stingray anti-submarine torpedoes launched from both the ship and her helicopter, and Sea Skua anti-ship missiles launched from the helicopter. Perhaps not the most handsome of ships, the geometry of the hull and superstructure was designed for 'stealth' to minimise radar reflections. Quiet running, at slow speeds, was possible, using the direct drive electric motors powered by diesel generators. The 16 ships were named, somewhat anachronistically, after dukes. *Marlborough* became a victim of the 2003 defence cuts and was paid off in 2005 for sale to the Chilean Navy. (© NMRN)

RIGHT • HMS *OCEAN*
The helicopter carrier *Ocean* at anchor during Exercise *Cold Response*, in Norway. She was built by VSEL, Barrow, with hull construction subcontracted to Kvaerner, Govan, and commissioned on 30 September 1998. Her hull was based on the Invincible class up to the waterline, and she was powered by diesel engines rather than gas turbines. She had been ordered in 1992 to address the lack of a commando/helicopter carrier which had been highlighted in the Falklands conflict, and was again in the Balkans War. The ship's primary role was to carry an embarked military force (normally a Royal Marines Commando of up to 800 personnel and up to 40 trucks and artillery) supported by 12 medium support helicopters (initially Sea Kings), six attack helicopters (initially Lynx) and four fast troop landing craft (Landing Craft Vehicle Personnel, LCVP) which were manned by 9 Assault Squadron, Royal Marines. Her secondary roles included as a limited anti-submarine warfare platform and a base for anti-terrorist operations. (Crown Copyright/OGL)

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CHAPTER 6

MILLENNIUM RETRENCHMENT 2000–2009

The first decade of the new millennium was notable for the Iraq invasion of 2003 (the Second Gulf War), in which a Royal Navy task group and the Royal Marines played very important parts, and the Afghanistan conflict, which saw extensive involvement of Royal Marines in security operations. However, the middle of the decade brought reductions in the size of the fleet, which accompanied the commitment to order two new aircraft carriers.

UK defence spending was 2.55 per cent of GDP in 2000, before declining slightly so that from 2003 to 2008 it was constant at about 2.4 per cent, and in 2009 was 2.6 per cent.[1] However, the worldwide financial crisis of 2008, by which the UK was severely affected, meant that more cuts were looming.

The composition of the fleet at the start of the decade is given in the table on the next page. The fleet was organised into the Surface Flotilla which consisted of the aircraft carriers and assault ships, two frigate squadrons based at Devonport, and two destroyer squadrons and one frigate squadron based at Portsmouth; Submarine Command which consisted of two squadrons (based at Faslane and Devonport respectively); the Mine Countermeasures Flotilla (two squadrons based at Portsmouth and Faslane); and the Survey Squadron.

New construction underway in 2000 included two assault ships, three Type 23 frigates (all of which were fitting out) and four MCMVs (all of which were fitting out). It had been announced in the 1998 Strategic Defence Review that two new large aircraft carriers were to be built to replace the three Invincible class, by which time initial design studies were underway. The order was placed on 20 May 2008 and the two ships were laid down in 2009 and 2011 respectively.

In 2000, Royal Navy personnel totalled 35,833, including 6,884 officers; plus Royal Marines 6,725, including 682 officers. This reflected a massive 33 per cent reduction that had occurred since 1990. The Voluntary Reserve stood at RN 3,121 (including 958 officers), and Royal Marines 913 (including 81 officers).[2] The regular naval reserve totalled 24,200.[3]

Aircraft carriers	3	Fleet submarines	12	Patrol vessels	7
Helicopter carrier	1	Destroyers	12	Ice patrol ship	1
Assault ships	2	Frigates	21	Survey ships	5
Trident submarines	1	MCM vessels	21	Patrol/training boats	18

Prior to 2000 an admission of homosexuality, when questioned, led to instant dismissal in the Navy. But in 1999, an investigation into the dismissal of several members of the forces on the basis of sexual orientation made it to the European Court of Human Rights. The unanimous verdict found it a breach of privacy and, on 12 January 2000, the ban on homosexuality in the forces was lifted. Today the Royal Navy actively recruits in gay magazines and has hosted a number of civil ceremonies on board its vessels.[4] On 1 December 2021 the rule that personnel testing HIV positive would be immediately discharged was reversed, there now being no ban on them serving.

The International Festival of the Sea at Portsmouth in August 2001 was even larger than the 1998 event. A stunning line-up of tall ships was complemented by both British and foreign warships, the Royal Navy being represented by *Illustrious*, *Nottingham*, *Exeter*, *York*, *Southampton*, *Grafton*, *Richmond*, *Westminster* and *Endurance*.

In late August–early September 2001 a large task group left the UK for Exercise *Argonaut* in the Middle East. It included the carriers *Illustrious* and *Ocean*, assault ship *Fearless*, frigates *Kent*, *Monmouth*, *Marlborough* and *Cornwall*, destroyers *Nottingham* and *Southampton*, landing ships RFA *Sir Percivale*, *Sir Bedivere*, *Sir Galahad* and *Sir Tristram*, and RFAs *Oakleaf*, *Bayleaf*, *Fort Victoria*, *Fort Austin* and *Fort Rosalie*. Also in the region was a mine countermeasures group – *Inverness*, *Walney*, *Cattistock* and *Quorn*, supported by the survey ship *Roebuck* and RFA *Diligence*. Additionally, the heavy lift ships RFA *Sea Centurion* and *Sea Crusader* moved Army equipment from the UK and Germany to Oman. 3 Commando Brigade, Royal Marines, was embarked in the amphibious warfare ships and conducted amphibious landings in the joint UK–Omani Exercise *Saif Saareea II* (*Swift Sword 2*) in Oman. In October the submarines *Trafalgar* and *Superb* were deployed, and joined by *Triumph*, to launch ground attack cruise missiles on targets in Afghanistan at the start of the so-called 'War on Terror' which had followed the attacks on the World Trade Centre in New York in September.[5]

Illustrious, with 40 Commando, who were conducting operations ashore in Afghanistan against the Taliban and Al Qaeda, continued operations in the area until early March, taking up the role of helicopter carrier after *Ocean* returned to the UK for planned maintenance. *Illustrious*' task group included *Southampton*, *Cornwall*, *Trafalgar* and RFAs *Sir Tristram*, *Sir Percivale*, *Diligence*, *Fort George*, *Fort Rosalie* and *Brambleleaf*, and was part of an international Maritime Interdiction Force. *Illustrious* was relieved by the returning *Ocean* and 45 Commando.[6] *Ocean*'s new task group included the destroyer *York*, frigate *Campbeltown*, the Tomahawk-armed submarine *Superb* and RFAs *Sir Percivale*, *Sir Tristram*, *Fort Austin*, *Fort George*, *Bayleaf* and *Diligence*. The Armilla patrol frigates *Portland* and *Argyll* were also in the area. *Ocean*, *York* and *Fort George* returned to the UK in June, leaving the remaining RFAs to support 45 Commando and *Portland* as the Armilla patrol ship.[7]

In May 2000, the submarine *Tireless* developed a serious leak in the nuclear reactor primary cooling circuit, although there was no leak of radioactive material. The nuclear propulsion system was shut down and, using backup diesel power, *Tireless* made her way to Gibraltar. The damage was found to be more extensive than first thought, and the boat did not depart until 7 May 2001, after almost a year of extensive repair work.[8]

A worrying series of nine incidents involving nuclear-powered submarines hitting objects or grounding occurred between 2001 and 2003. In November 2002 *Trafalgar* ran aground off the Isle of Skye whilst conducting 'Perisher' training for prospective submarine commanders. The submarine hit the seabed hard, all of the crew members were hurled to the floor and three were injured. She was put out of action for over a year, with repairs

reported to cost £5 million. A board of inquiry found that the commander of *Trafalgar* and another commander, who was in charge of submariner training, had hazarded the submarine and had both admitted negligence. They were severely reprimanded and reprimanded respectively.[9]

Six months later *Tireless* hit an iceberg, whilst submerged on patrol in the Arctic Circle area, causing 'minor ballast tank damage'. The submarine's bow was forced down nine degrees and the vessel subsequently broke free of the iceberg at a depth of 78 metres. There was no prior warning of the impending collision from passive sonar or other on-board sensors.[10]

The destroyer *Nottingham* was seriously damaged on 7 July 2002 when, due to navigational error, it struck rocks on Wolf Rock, near Lord Howe Island, whilst on a passage from Australia to New Zealand. A large hole was torn in the bow of the ship, and she was only prevented from sinking by the bravery and skill of the ship's company, working in near-darkness and a heavy swell to shore up the hull and bulkheads against further flooding. *Nottingham* had to be transported back to the UK on a heavy lift ship and was repaired in Portsmouth, at a reported cost of £26m. The ship's captain, who had been flown to the island on an impromptu visit, subsequently faced a court martial and was reprimanded for failing to properly delegate conduct of the ship to his executive officer. The navigating officer was given a severe reprimand, and the executive officer and officer of the watch were both dismissed their ship.[11]

Throughout 2002 tension was rising over Iraqi leader Saddam Hussein's reluctance to comply with United Nations security resolution 1441 regarding weapons inspections, and plans were being made by western allies for a show of force in the Arabian Gulf (Persian Gulf), which could be a precursor to an invasion of the country if it did not comply. In December 2002 the 1st MCM Squadron, consisting of *Brocklesby*, *Bangor*, *Blyth* and *Sandown*, with their support ship *Sir Bedivere*, passed through the Suez Canal en route to the Gulf, and were later joined by *Ledbury* and *Grimsby*.

This was a precursor to the large build-up of US and UK forces in the region. In January and early February 2003, a large amphibious task group headed by *Ark Royal* (equipped as a helicopter carrier) left the UK for the Gulf. With 40 and 42 Commando and their support units embarked, the task group also included the helicopter carrier *Ocean*, the submarine *Splendid*, the destroyers *York, Edinburgh* and *Liverpool,* the frigates, *Marlborough* and *Northumberland*, and RFAs *Sir Percivale*, *Sir Galahad*, *Sir Tristram*, *Argus*, *Fort Victoria*, *Fort Rosalie* and *Fort Austin.* They would be joining RFAs *Oakleaf* and *Orangeleaf,* which were already in the Mediterranean and would move eastwards; the submarine *Turbulent*, destroyer *Cardiff,* frigate *Cumberland*, survey ship *Roebuck* and RFAs *Diligence*, *Brambleleaf* and *Grey Rover*, which were already in the Gulf region; and the frigates *Chatham* and *Cornwall*, which were deployed separately.[12] *Roebuck*'s survey launch was employed inside Iraqi territorial waters in clandestine operations surveying the inshore waterways whilst *Cumberland* acted as guardship offshore.[13] The fleet was the largest assembly of British warships since the Falklands conflict, and complemented the large US fleet and ships of coalition navies in the build-up.

The British amphibious task group, consisting of 22 ships, a commando brigade, 45 helicopters and 6,000 sailors, marines, soldiers and airmen, passed through the Straits of Hormuz on 9 February, and on 20 March was ordered to execute its mission, Operation *Telic*, to secure the Al Faw peninsula, the port of Umm Qasr and the city port of Basra, with the oil installations and infrastructure in southern Iraq. This involved the forces of 40 and 42 Commando in what were the first helicopter-borne assaults since the Suez campaign in 1956. They were supported by 845 and 847 Naval Air Squadrons from *Ocean*, and RAF No. 8 Squadron Chinooks and 849 Naval Air Squadron from *Ark Royal*. Lynx helicopters of 847 NAS destroyed a number of Iraqi tanks with their TOW missiles.

Naval gunfire support was supplied by the frigates *Chatham, Marlborough* and *Richmond*, and Tomahawk missile attacks from the two submarines. *Richmond* was attacked by land-launched missiles, which fortunately missed, whilst *Chatham* and the Australian frigate *Darwin* blocked the exit from the Shatt al'Arab river and directed RAF Tornados to attack two Iraqi patrol boats which were escorting an Iraqi frigate, which had to turn back in the face of this opposition. All of Operation *Telic*'s objectives were

achieved and the southern part of Iraq was secured (whilst the American forces captured Baghdad and northern Iraq).[14]

RFA *Argus* served as a primary casualty receiving ship during Operation *Telic*. After the conflict humanitarian aid was delivered to Umm Qasr by *Sir Galahad*, *Sir Tristram* and *Sir Percivale*, supported by RFA *Bayleaf*, and the task of mine clearance by MCMVs continued, with *Shoreham* and *Ramsey* joining *Ledbury* and *Grimsby* in the squadron to relieve other vessels.[15]

In July 2004 it was announced that by 2007 the fleet would be reduced by 12 ships, which would be decommissioned prematurely. They were the destroyers *Newcastle*, *Cardiff* and *Glasgow*, the Type 23 frigates *Norfolk*, *Marlborough* and *Grafton* and six MCMVs (three of which had latterly been re-equipped as patrol vessels for Northern Ireland security duties). It was said that these cuts would ensure that the Navy got its two new aircraft carriers and eight Type 45 destroyers to escort them. This would involve ordering two more Type 45s (which had originally been planned as a class of 12 ships, but the two promised in 2004 were *not* ordered so ultimately only six were built). The cuts would mean the destroyer and frigate force would be reduced to 25.[16] The fleet submarine force would be reduced to eight boats by 2008, by paying off three Swiftsure-class boats, leaving just *Sceptre* of that class in service. Personnel numbers would reduce by 1,500 to 36,000. The Type 23 frigates were sold to Chile, whilst two Hunt-class MCMVs were sold to Lithuania, and three Sandown class to Estonia.

When overseas disasters happen, especially in UK overseas territories, the Navy is often called upon to support relief operations. During the hurricane season the Atlantic Task Force North, consisting of a warship and an RFA, was maintained in Caribbean waters where it also conducted anti-narcotics patrols. An example came in September 2004 when a hurricane hit the island of Grenada, and the frigate *Richmond* and oiler RFA *Wave Ruler* provided disaster relief. In Grenada their personnel restored power to the hospital, provided emergency supplies to the hospital, treated casualties, cleared the airport runway so that operations could be resumed, and coordinated emergency services. In the same year, in the aftermath of the Sri Lanka tsunami which had hit on Boxing Day, teams from the frigate *Chatham* and RFA *Diligence* helped rebuild critical infrastructure destroyed by the sea and assisted in the process of bringing people out of their emotional distress so that they could start getting their lives back on track.[17]

The unlucky submarine *Tireless* was in the news again in July 2007, after an explosion occurred when a backup air purification system was being tested. Tragically, two sailors were killed and a third was airlifted to a military hospital in Anchorage, Alaska, where he recovered. The boat was exercising with an American submarine deep under the Arctic ice cap, and surfaced through the ice so that hatches could be opened to let out the fumes.[18]

One of the Swiftsures due to pay off in September 2008, *Superb*, hit a rock pinnacle at 16 knots in the Red Sea in May of that year and sustained heavy damage, which was not repaired and the boat paid off. Officers had misread charts, thinking that the top of the pinnacle was 732 metres below the surface when in fact it was 600 metres higher. The commanding officer and navigator were reprimanded, whilst the officer of the watch was severely reprimanded.[19]

On 28 June 2005, a hot and sunny day, the bicentenary of the battle of Trafalgar was marked by a spectacular international fleet review at Spithead. Some 170 ships gathered there, the Royal Navy presence being headed by *Invincible*, *Illustrious*, *Ocean*, *Albion* and *Bulwark*. With them were the submarines *Trafalgar*, *Turbulent* and *Sovereign*, the destroyers *Exeter*, *Nottingham*, *Southampton* and *Gloucester*, the frigates *Cumberland*, *Chatham*, *Marlborough*, *Grafton*, *Montrose*, *St Albans*, *Iron Duke*, *Lancaster* and *Westminster*, and various smaller RN ships and RFAs. The ice patrol ship *Endurance* served as royal yacht. They were complemented by a host of foreign and Commonwealth warships, tall ships and merchant ships.[20] Ironically the largest ship present was the French nuclear-powered aircraft carrier *Charles de Gaulle*. In the evening, by which time rain had moved in, a mock 19th-century sea battle was staged by tall ships, and there was a grand firework display.[21] On the following day many of the ships moved to Portsmouth Dockyard to be open to the public, in the third of Portsmouth's International Festivals of the Sea.

In July 2006 the Navy was called upon to evacuate civilians holding British passports, who had become trapped in a battle zone in southern Lebanon, following Israel's invasion of the territory and ongoing aerial attacks against Hezbollah, which had created a dangerous security situation. They could not fly out from Beirut's international airport because it had been knocked out by Israeli air strikes. The carrier *Illustrious* and RFA *Fort Victoria* were heading home from a short East of Suez deployment and were ordered to sail for the Mediterranean. The frigate *St Albans*, which was in the Gulf of Aden, was ordered to head up the Suez Canal to join the destroyers *Gloucester* and *York*, which were already in the Mediterranean, to assist off Lebanon. The assault ship *Bulwark* was just days from its home port of Devonport, after operations off the coasts of Iraq and Somalia, when she was also ordered to head for the Mediterranean. RAF Chinooks and Sea Kings from 845 and 846 Naval Air Squadrons, which were flown out from the UK to be based at RAF Akrotiri in Cyprus, transferred the evacuees to the ships. More than 4,500 people were brought to the safety of Cyprus by *Bulwark*, *Gloucester*, *York* and *St Albans* in the space of six days, just seven days after the operation had been ordered. From there they were repatriated by air.[22]

An advance party of Royal Marine commandos of 42 Commando was deployed to Helmand province, Afghanistan on peacekeeping duties in early 2006, protecting army and RAF personnel from Taliban attacks as they set up an operating base at Lashkar Gah. In October 2006 they were joined by the rest of 42 Commando, whilst elements of 45 Commando were in Kabul, both commandos being part of 3 Commando Brigade on a six-month tour of duty, having relieved the army's 16 Air Assault Brigade. The marines, some 2,000 in number, were involved almost daily in fierce fighting and hostile action with the Taliban, as they pursued their mission to stabilise the country by preventing Taliban fundamentalists and other insurgents from plunging the province deeper into chaos. Also in Afghanistan was 800 Naval Air Squadron, flying Harrier GR7 ground attack aircraft on Taliban ground attack suppression missions, in support of ground operations by British and NATO forces, whilst Sea Kings of 846 Naval Air Squadron were supporting the Royal Marines. In total over 3,000 RN personnel (commandos, ground and air crew, and medics) were serving in south Afghanistan.[23]

Meanwhile the Navy continued to have an important role in the Persian Gulf, keeping shipping routes open, contributing ships to the Coalition Task Force 158, and in the extensive continuing security operations in southern Iraq. The frigate *Cornwall* became flagship of the task force when the Royal Navy took over command of the force in March 2007.

On 27 March she was conducting stop-and-search operations, enforcing United Nations resolutions, close to the Iraqi coast when an unfortunate and rather embarrassing incident took place. A boarding team of 15, including seven marines and one female sailor, left the ship in two RIBs to inspect an Indian merchant ship, whilst *Cornwall* was further out to sea because of the shallow water. After leaving the ship, although they believed they were about two miles outside Iranian territorial waters, they were surrounded by heavily armed Iranian Revolutionary Guards in fast boats armed with heavy-calibre machine guns and rocket-propelled grenades, who proceeded to arrest them, claiming they were in Iranian waters. The British party did not have sufficient arms or authority to oppose them, and understandably did not want to escalate the dispute. They were held prisoner and humiliated in the full glare of the world's press for 12 days, until diplomatic actions secured their release.

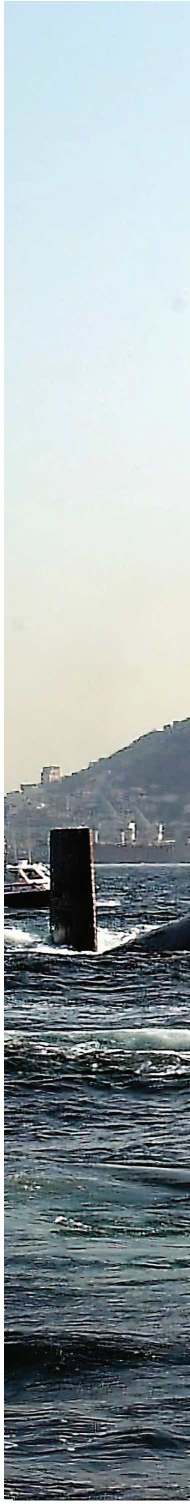
It emerged that the maritime boundary between Iraq and Iran where the incident had taken place had not been defined by international agreement, and the map that the British were using showed a boundary which had not been agreed with the Iranians and could be classed as disputed waters. When they returned to the UK two of the Britons were permitted to sell their stories to the popular press, which attracted strong criticism, compounding the embarrassment felt by the Navy.[24] The officers involved in the mission were castigated by the Commons Defence Committee for a 'lapse in operational focus' and a 'widespread failure of situational awareness'. There had been 'weaknesses in intelligence, in communications, in doctrine and in training'.[25]

In September 2007 40 Commando returned to Helmand province, as did 846 Naval Air Squadron's Sea Kings, and the Naval Strike Wing returned to Kandahar in the following month, flying Harrier GR7 and GR9 aircraft to support ground forces in Helmand and Kandahar provinces. The marines conducted successful operations against the Taliban in the battle for Musa Qaleh and the securing of the Kajaki dam.[26]

In December 2008, while on an 18-month deployment, which was a departure from her normal annual cycle, the ice patrol ship *Endurance* suffered extensive flooding to her machinery spaces and lower accommodation decks, resulting in the near loss of the ship. A serious engine-room flood left her without power or propulsion, and she was towed to Punta Arenas in the Strait of Magellan by a Chilean tug. The ship could have capsized or run aground off Chile, an MoD investigation concluded. It was a 'near loss' incident and 'clarity of command' had been lost when the engine control room flooded. The flood happened when a valve opened suddenly and without warning because air lines attached to it had been incorrectly reinstalled, due to lack of knowledge among staff. The ship began to roll to 25 degrees either side of upright and Navy personnel and civilians began bailing out secondary floods. Eventually the ship was anchored as it drifted over shallow water. The Chilean navy airlifted off 15 civilians. The inquiry concluded some 'cumulative' risks could have been previously identified, because the engine room had flooded twice in the preceding eight weeks.[27]

Endurance was later loaded onto a transporter ship and brought back to Portsmouth, where she arrived on 8 April 2009. She remained laid up at Portsmouth until 2016, when she was sold for scrapping, it having been decided that repairs to the ship (estimated to cost £30m) would not be an economic proposition. She was replaced by *Protector.*

In February 2009 it was reported that, on 3 or 4 February, the Trident submarine *Vanguard* had been in collision with the French ballistic missile submarine *Le Triomphant*, when the two boats had been undertaking separate patrols in the Atlantic. This was a serious incident – both submarines were carrying nuclear ballistic missile warheads. *Vanguard* returned to Faslane with dents and scrapes on the hull. *Le Triomphant* limped home to Brest with extensive damage to its bow sonar dome. Nobody aboard either boat was injured.[28]



ABOVE • HMS *SHEFFIELD*
The Type 22 frigate *Sheffield* (seen in May 2001) was of Batch 2, with a longer hull than Batch 1 to accommodate towed array sonar, and had a larger hangar which could take a Sea King helicopter. She was ordered on 14 December1983 from Swan Hunter, Wallsend, and commissioned on 26 July 1988. The original name allocated was *Bruiser*, but this was changed to honour the destroyer *Sheffield*, which had been lost in 1982. In January 1991, following the invasion of Kuwait, *Sheffield* joined the carrier *Ark Royal*, destroyer *Manchester* (later replaced by *Charybdis*) and the RFAs *Olmeda* and *Regent* in the eastern Mediterranean, where they operated with units of the US 6th Fleet and participated in a joint air defence exercise in the Ionian Sea, including 18 ships from seven NATO countries. In September 1998 she rendered hurricane relief in the Caribbean, off St Kitts and Honduras. She was decommissioned on 5 November 2002 and sold to the Chilean Navy. (Crown Copyright/OGL)

RIGHT • HMS *TIRELESS*
The Trafalgar-class submarine *Tireless* leaving Gibraltar in May 2001 after repairs there. In May 2000 she had developed a serious leak in her nuclear reactor's primary cooling circuit, although there was no leak of radioactive material. The nuclear propulsion system was shut down and using backup diesel power *Tireless* made her way to Gibraltar for extensive repair work, which took nearly a year to complete. In May 2003 she hit an iceberg whilst submerged in the Arctic Circle area, causing 'minor ballast tank damage'. On 21 March 2007 she was at the North Pole, with USS *Alexandria* for scientific work, when two *Tireless* crew members were killed in an explosion on board, caused by an oxygen generator candle in the forward section of the submarine. The boat had to make an emergency surface through the ice cap. She had been built by Vickers, Barrow, and commissioned on 5 October 1985 and was finally decommissioned on 19 June 2014. (Crown Copyright/OGL)

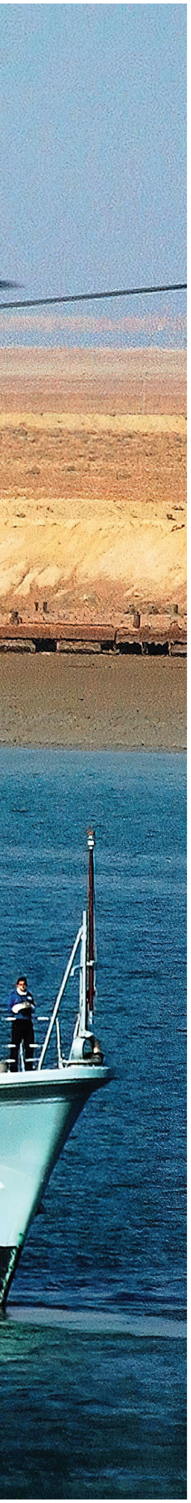
ABOVE • HMS *FEARLESS*
The assault ship *Fearless* displays her complement of landing craft as they steam abreast of her in January 2001. The four landing craft utility (LCU) were normally carried in the well dock astern, accessed via the large stern gate, whilst the four smaller LCVP (landing craft vehicles and personnel) were normally embarked in the davits on either side of the superstructure. A long refit in Devonport Dockyard in the late eighties saw her 40mm Bofors guns and Seacat anti-aircraft missile launchers replaced by two 20mm BMARC and two Phalanx close-in-weapon-system guns. In September 2001 *Fearless* was part of a large task group (led by *Illustrious* and *Ocean*) engaged in Exercise *Argonaut* in the Middle East, which was a prelude to the 'War on Terror' following the 9/11 attack on New York. She paid off at Portsmouth on 18 March 2002 and was laid up there prior to being sold for breaking up at Ghent, Belgium, in 2007. (Crown Copyright/OGL)

RIGHT • HMS *NOTTINGHAM*
In the inset photograph, the crew of *Nottingham* prepare to come ashore after the ship hit Wolf Rock, off Lord Howe Island, on 8 July 2002, and ripped open its hull. This was due to a navigational error whilst on a passage from Australia to New Zealand. She was towed to Sydney harbour and on 22 October was lifted onto a heavy lift ship (see main image, showing damage to the bow) to be taken to Portsmouth for repairs. Her captain, Commander Richard Farrington, who had been flown to the island for an impromptu visit, and returned just before the grounding, was court-martialled and reprimanded for failing to properly delegate conduct of the ship to his executive officer. The navigating officer was given a severe reprimand and the executive officer and officer of the watch were both dismissed their ship. The captain was given a desk job but later achieved commodore rank as Commander, Devonport Flotilla, with over 20 ships and submarines and 4,000 personnel under his command. (Main: Photo by Daniel Berehulak/Getty Images; Inset: Photo by Fairfax Media via Getty Images)

91

9.5

NAVY



LEFT • HMS *SANDOWN*
The minehunter *Sandown* in the northern Arabian Gulf on 28 March 2003, undertaking mine clearance operations off the Iraqi port of Umm Qasr during Operation *Telic* to secure the Al Faw peninsula in southern Iraq as part of the allied invasion. An Australian Sea King helicopter patrols overhead. Built by Vosper Thornycroft, Woolston, *Sandown* was the lead ship of her class. She was commissioned in June 1989, and undertook extensive first-of-class trials, but sonar problems meant she was not operational until December 1992. From June to August 1999 she was part of a NATO-led operation clearing bombs jettisoned in the Adriatic during the Balkans War. She and *Atherstone* accounted for 20 per cent of the 93 bombs and missiles that were located and destroyed. *Sandown* was decommissioned in 2005 and was sold to the Estonian Navy. She was renamed *Admiral Cowan* after Admiral Sir Walter Cowan RN, who in 1919 led the British Baltic squadron providing naval support to Estonia during its war of independence from Russia. (Crown Copyright/OGL)

ABOVE • HMS *ARGYLL*
The Type 23 frigate *Argyll* in August 2004. Built by Yarrow Shipbuilders, Glasgow, she was the third of her class to enter service when commissioned on 30 May 1991. Her superstructure was shaped to minimise radar reflections, reportedly making the ship as small as a fishing boat on the enemy's radar. Her combined diesel-electric and gas turbine propulsion allowed the ship to cruise slowly and extremely quietly, using electric motors, making her virtually inaudible when hunting submarines. From February to August 2005 and from October 2007 to April 2008 *Argyll* completed two six-month deployments to the Persian Gulf on Armilla patrols. A long refit and capability upgrade in Devonport Dockyard from 2015 saw her emerge in 2017 as the first RN ship with the Sea Ceptor air-defence missile system, replacing Sea Wolf. She acted as the trials vessel for Sea Ceptor, undertaking the first firings of Sea Ceptor off the west coast of Scotland in summer 2017, prior to resuming her operational duties. (Crown Copyright/OGL)

LEFT • HMS *SPLENDID*
The nuclear-powered attack submarine *Splendid* off Scotland in March 2005. She had been built by Vickers, Barrow, and commissioned on 21 March 1981, the last of six Swiftsure class to enter service. When it became known that the Argentinian junta would invade the Falklands *Splendid* was ordered to deploy to the South Atlantic. She was withdrawn from Russia's Northern Fleet exercise area, where she was trailing a Soviet submarine, and sailed from Faslane for the South Atlantic on 1 April 1982. She attempted to track the aircraft carrier *Veinticinco de Mayo*, but was unable to locate her when she was operating outside Argentinian territorial waters. *Splendid* monitored strike aircraft taking off from their bases on the Argentinian mainland to give intelligence to the British task force. In 1998 she was the first British submarine to be equipped with Tomahawk cruise missiles, and fired them at land targets in the Kosovo War (1999) and Second Gulf War (2003). She was decommissioned in 2004. (Crown Copyright/OGL)

ABOVE • HMS *EXETER*
The Type 42 destroyer *Exeter* at sea, in about 2005. She had been ordered from Swan Hunter, Wallsend, on 22 January 1976 and commissioned on 19 September 1980. She was one of the four Batch 2 Type 42s, with a number of weapon and sensor upgrades. During the 1982 Falklands conflict, on 30 May 1982, she shot down two Argentinian Skyhawk aircraft (out of four attackers), despite them flying only 10–15 metres above the sea, which was below Sea Dart's theoretical minimum engagement altitude of 30 metres. Her success can partly be attributed to her being the first Type 42 to be equipped with Type 1022 radar, which provided greater capability against fast low-flying targets than the older Type 967 fitted to the earlier Type 42s. She was finally decommissioned on 27 May 2009, having been the last RN warship in service that had served in the Falklands conflict. (Author's collection)

ABOVE • HMS *ALBION*
The assault ship *Albion* seen at the 2005 Fleet Review. She was built by BAE Systems, Barrow, and commissioned on 19 June 2003. She carried a permanently embarked Royal Marines landing craft unit, 6 Assault Squadron, Royal Marines, and was armed with two 20mm Goalkeeper close-in weapon systems and two 20mm Oerlikon guns. Up to 60 vehicles could be carried on two vehicle decks forward. She was equipped with a large command system and operations room, and during the Vela Deployment, September to November 2006, served as the Amphibious Task Group flagship. Three thousand British personnel and 11 ships of the RN (including the helicopter carrier *Ocean* and an attack submarine) and RFAs (including the Bay-class auxiliary landing ship dock *Mounts Bay*) were involved in exercises in the south-west of the UK and in Sierra Leone, West Africa. From late 2011 until 2017 she was in reserve following the 2010 Defence and Security Strategic Review.
(Crown Copyright/OGL)

RIGHT • HMS *BULWARK*
The landing platform dock (LPD) *Bulwark*, also known as an assault ship, at the Trafalgar 200 International Fleet Review in June 2005. *Bulwark* and her sister ship *Albion* were built by BAE Systems, Barrow, to replace the assault ships *Fearless* and *Intrepid*. They had diesel-electric propulsion which gave a speed of 18 knots. Each ship could embark 830 troops and up to 40 trucks and artillery. A large door forward gave access for vehicles to enter from the dockside. A stern door gave access and egress to the floodable dock for the four landing craft utility (LCU) carried by the ship, and four LCVP troop landing craft were carried in davits, one of which can be seen embarked. The flight deck could accommodate helicopters as large as Chinooks, though there was no hangar. *Bulwark* was commissioned on 28 April 2005, and in July 2006 evacuated 1,300 civilians from Lebanon following the Israeli invasion.
(Paul Brown)

L15

ABOVE • HMS *WESTMINSTER*
The Type 23 frigate *Westminster* in June 2005 at the Trafalgar 200 International Fleet Review, Spithead, with one of the Royal Navy's first Merlin helicopters embarked. Together with the frigate *Cumberland*, destroyer *Gloucester*, Canadian frigate *Montreal* and Australian frigate *Anzac* she participated in a fast steam-past through the lines. She had been equipped with the Merlin in 2004, when she was also the first to be fitted with the new low-frequency Type 2087 sonar. In March 2011, *Westminster* took part in Operation *Ellamy*, the British action in the coalition's enforcement of an arms embargo and no-fly zone during the Libyan civil war. A long refit in Portsmouth Dockyard between November 2014 and January 2017 gave her a new principal weapon, the Sea Ceptor surface-to-air missile system, with twice the range of the old Sea Wolf system, and Type 997 radar. *Westminster* had been built by Swan Hunter, Wallsend, and commissioned on 13 May 1994. (Paul Brown)

RIGHT • HMS *SOUTHAMPTON*
The Type 42 destroyer *Southampton* dressed overall at the Trafalgar 200 International Fleet Review, Spithead, in June 2005. She had been built by Vosper Thornycroft, Woolston, and was commissioned on 31 October 1981. During her operational sea training she ran over a buoy off Portland and sustained damage which required docking for repairs, and so could not deploy to the Falklands as had been planned. In September 2001 she was part of a large task group, led by *Illustrious*, which left the UK for Exercise *Argonaut* in the Middle East. She continued in support of land operations in Afghanistan with *Illustrious* and 40 Commando, who were conducting operations ashore against the Taliban and Al Qaeda at the start of the so-called War on Terror. In July 2008 she was reduced to a state of extended readiness and was decommissioned on 12 February 2009. In 2011 she was sold for breaking up in Turkey. (Paul Brown)

D90

ABOVE • HMS *DULVERTON*
The minehunter *Dulverton* was one of three Hunt-class minehunters stripped of their minehunting equipment in 1997 and equipped as patrol vessels for service in the Northern Ireland Squadron. She was fitted with derricks and two rigid inflatable boats on the quarterdeck, and is seen here patrolling the review area at the Trafalgar 200 International Fleet Review in June 2005, as a security measure. Shortly afterwards the Northern Ireland Squadron was disbanded, and she was decommissioned. She was sold in 2008 to the Lithuanian navy, as was her sister ship *Cottesmore*, whilst *Brecon* became an alongside training ship at Torpoint. In 2020 another Hunt, *Quorn*, was sold to Lithuania. *Dulverton* had been ordered from Vosper Thornycroft, Woolston, on 19 June 1980, launched on 3 November 1982 and accepted into service on 5 October 1983. Her two Ruston-Paxman Deltic diesels gave her a speed of 16 knots, whilst hydraulic drive allowed slow running up to eight knots whilst minehunting. (Paul Brown)

RIGHT • HMS *SCOTT*
The ocean survey vessel *Scott* at the Trafalgar 200 Fleet Review. Built by Appledore Shipbuilders, and commissioned on 20 June 1997, she could remain at sea for up to 300 days a year, thanks to her three-watch crew rotation system with 42 personnel embarked at any one time from a total complement of 63. This lean-manning was possible through commercial practices like the use of fixed firefighting equipment and extensive machinery and safety surveillance technology. *Scott*'s High Resolution Multi Beam Sonar System, a swathe echo sounder, could collect depth information over a strip of the seabed several kilometres wide. She was the largest survey vessel in western Europe, and operated worldwide. Between 1997 and 2021 she surveyed approximately 3.7 per cent of the world's oceans alone – impressive since only one-fifth of the world's oceans have been surveyed to modern standards. Named for the famous Arctic explorer Robert Falcon Scott, she also had an auxiliary role as a minehunter command and support ship. (Paul Brown)

ORONSAY
A284

FORT VICTORIA

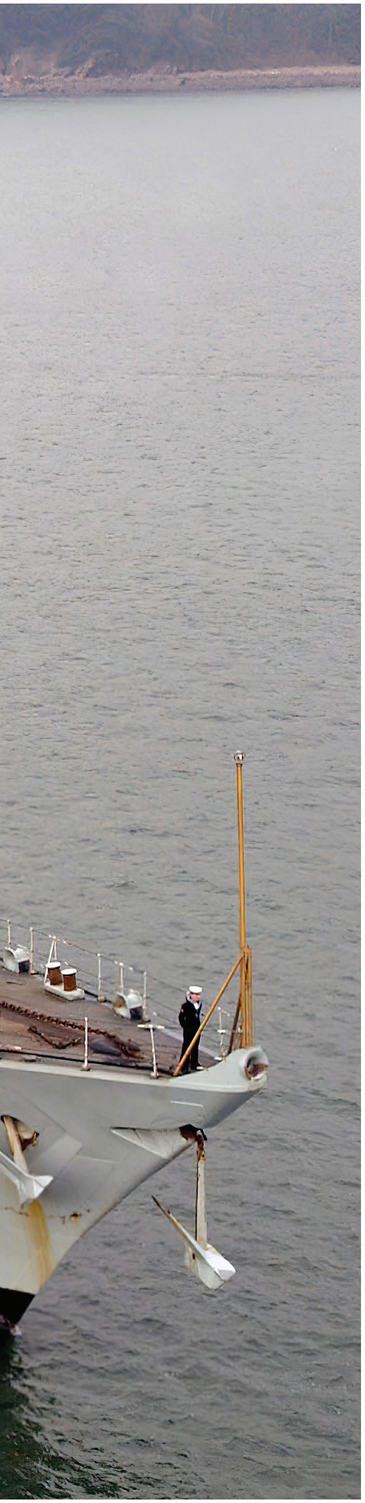
LEFT • RFA *FORT VICTORIA*

Fort Victoria, seen at the Trafalgar 200 International Fleet Review, combined the functions of fleet oiler and stores ship. Her large flight deck was supported by hangars for three Sea King-sized helicopters. She could embark and support both anti-submarine helicopters and troop-carrying Sea King Mk 4 helicopters, which could transfer stores to other ships. Four dual-purpose replenishment rigs amidships enabled transfer of fuel and stores to two ships simultaneously during replenishment at sea and she could also refuel vessels over her stern. She was built by Harland & Wolff, Belfast, and accepted into service in June 1994. Although planned as a class of six, to support anti-submarine operations in the Atlantic, only two were built because of the end of the Cold War. The ship's company of 95 RFA officers and ratings was supplemented by 24 civilian Warship Support Agency staff and 15 RN personnel who maintained the weapons, including two Phalanx close-in weapon system guns and two 30mm guns. (Paul Brown)

ABOVE • HMS *YORK*

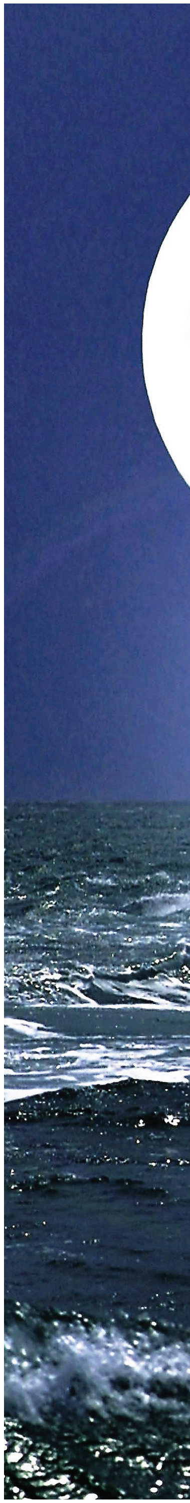
The Type 42 destroyer *York* executes a fast turn in October 2005, during a 20-week deployment to the Far East. In early 2002 she was with *Ocean*'s task group supporting operations ashore in Afghanistan against the Taliban and Al Qaeda. In 2003 she was in the large amphibious task group led by *Ark Royal*, which also included *Ocean*, for the invasion of Iraq. In July 2006, following Israel's invasion of Lebanon and ongoing aerial attacks against Hezbollah, *York* joined *Gloucester* in evacuating British citizens from Beirut, ferrying evacuees to Cyprus. They could not fly out from Beirut's international airport because it had been knocked out by Israeli air strikes. In February 2011, she was deployed to Malta to assist in the evacuation of British nationals from Libya, and became involved in NATO operations off Libya to enforce a United Nations arms embargo and no-fly zone. This included surveillance operations, repelling small boat activity, and boarding and inspecting merchant vessels.
(Crown Copyright/OGL)

F230



LEFT • HMS *NORFOLK*
The type 23 Frigate *Norfolk* served in the northern Arabian Gulf in November 2003 whilst deployed in Operation *Telic*, following the invasion of Iraq. In January 1999 she had been deployed to Sierra Leone to assist the British High Commissioner during a civil war and provide communications, transportation and logistics support to the elected government. The ship assisted in the evacuation of the archbishop of Freetown, five Roman Catholic priests and two badly injured nuns, who had been held hostage by the rebels for more than two months, and rescued a British national who had been shot. In July 2004, it was announced that *Norfolk* would be one of three Type 23 frigates decommissioned prematurely. She returned to her base port, Devonport, on 25 November 2004 and was decommissioned on 15 April 2005 prior to her sale to Chile. The lead ship of her class, she was built by Yarrow Shipbuilders, Glasgow, and commissioned on 1 June 1990. (Crown Copyright/OGL)

ABOVE • RFA *WAVE RULER* and HMS *IRON DUKE*
The Type 23 frigate *Iron Duke* undergoing replenishment at sea (RAS) with RFA *Wave Ruler* in August 2006, whilst carrying out the duties of the Atlantic Patrol Task (North). *Iron Duke*'s primary tasking was counter-drug operations in the Caribbean in conjunction with law-enforcement agencies including the United States Coast Guard. She was also on standby to provide disaster and humanitarian relief during the hurricane season. *Wave Ruler*, a Wave Knight-class fast fleet tanker built by BAE Systems, Govan, was accepted into service in April 2003. She was crewed by 72 Royal Fleet Auxiliary personnel and up to 26 Royal Navy personnel for helicopter and weapon systems operations. She could deliver fuel through RAS rigs, from port, starboard or astern to other vessels. For amphibious support, she could also deliver fuel to pillow tanks or dracones positioned alongside. She carried a Merlin helicopter (with full hangar facilities) and was armed with two 30mm guns and two Phalanx close-in weapon systems. (Crown Copyright/OGL)



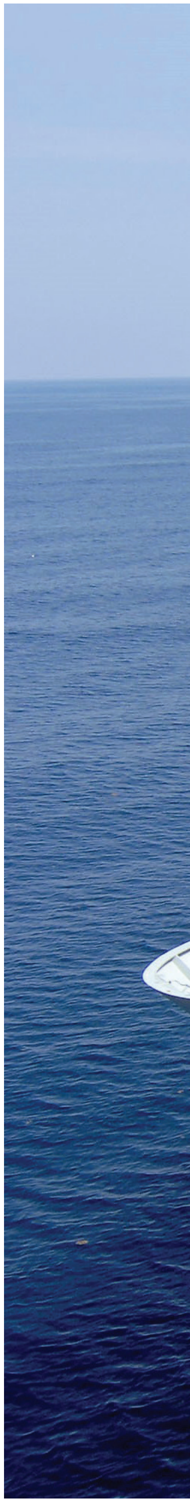
ABOVE • HMS *CORNWALL*
The Type 22 frigate *Cornwall* in the Persian Gulf, May 2007. Two months earlier a boarding team of 15 left the ship in two RIBs for a routine inspection of a merchant ship suspected of smuggling, whilst *Cornwall* was further out to sea because of shallow water. They were in disputed territorial waters and were surrounded by Iranian Revolutionary Guards, in fast boats armed with heavy-calibre machine guns and rocket-propelled grenades, who proceeded to arrest them, claiming they were in Iranian waters. They were held prisoner for 12 days, until diplomatic actions secured their release. In February 2011, while operating in the Gulf of Aden, boarding teams from *Cornwall* participated in the rescue of five Yemeni fishermen and the capture of 17 Somali pirates from a fishing dhow which had been seized by pirates. *Cornwall* was withdrawn from the fleet following the 2010 Defence Review, and paid off at Devonport on 30 June 2011. She was sold in 2013 for breaking up in Swansea. (US Navy)

RIGHT• HM Ships *EXPLORER* and *EXPLOIT*
The Archer-class (P2000) fast training boats *Explorer* (P164) and *Exploit* exercising in the Solent in December 2006. Also known as inshore patrol boats, 16 of these craft were built between 1985 and 1998. Their Rolls-Royce diesel engines gave them a speed of 20 knots. Each had a crew of five and accommodation for 12 undergraduates undergoing training. Their primary role was to support the University Royal Naval Units (URNU), but they also contributed to a wide range of fleet tasking including security duties at Faslane, Cyprus and Gibraltar, where their ability to operate in ports and confined waters not traditionally accessible to other warships proved valuable. *Explorer* (completed in 1985 by Watercraft) and *Exploit* (1988, Vosper Thornycroft) were two of the four boats originally allocated to the Royal Naval Auxiliary Service (RNXS) but were reallocated to URNU at Hull and Birmingham respectively when the RNXS was disbanded in 1994.
(Crown Copyright/OGL)

P167
P164
BAR

ABOVE • RFA *ARGUS*
Argus off south Devon in July 2007. Formerly the container ship *Contender Bezant*, she was requisitioned during the Falklands conflict and purchased outright by the MoD in 1984 for conversion to an aviation training ship to replace *Engadine*, training helicopter aircrew in operations at sea. She could also carry and launch Harrier aircraft. Two large lifts built into the flight deck served four hangar spaces below on the former vehicle deck. In 1991, during the First Gulf War, she was refitted for an additional role as a primary casualty reception ship (PCRS) with a 100-bed medical complex, including an emergency department, resuscitation and surgical facilities, and a radiology suite with a CT scanner. Her personnel, in more than 40 different medical specialities, were drawn from MoD Hospital Units and the Royal Marines Band Service. In 2009 PCRS became her primary function. She was not classed as a hospital ship because she could be fitted with self-defence guns and have operational units embarked. (Crown Copyright/OGL)

RIGHT • HMS *VENGEANCE*
The Trident submarine *Vengeance* is pictured in September 2007 returning to her Faslane base after a patrol. The fourth and final boat of the Vanguard class, she had been ordered from Vickers Shipbuilding & Engineering, Barrow, and laid down on 1 February 1993, launched on 19 September 1998 and was commissioned on 27 November 1999. She became operational in 2000, with a primary role of nuclear deterrence. She was equipped with 16 ballistic missile launchers and was also armed with four tubes for Spearfish torpedoes, which allowed her to engage submerged or surface targets at ranges up to 65 kilometres. In addition, six decoy launching tubes were fitted on each side between the missile tubes and the fin. Her maximum submerged speed was officially stated to be over 20 knots and may have been at least 25 knots. Between May 2012 and December 2015 she underwent a major refit and refuelling in Devonport Dockyard which was followed by six months of trials. (Crown Copyright/OGL)



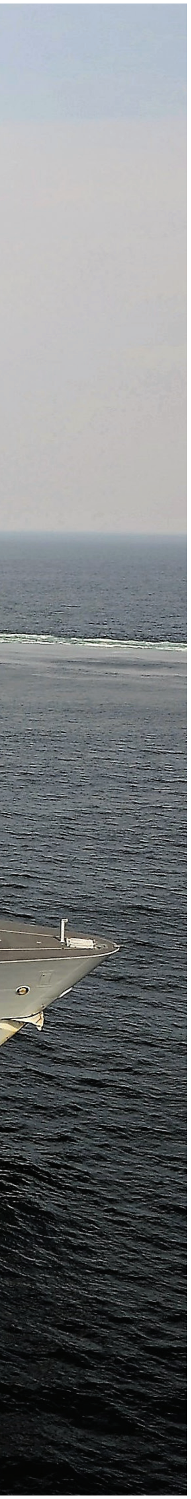
ABOVE • HMS *CLYDE*

The River-class offshore patrol vessel *Clyde* is pictured in the Patagonian Canal, in southern Chile. She patrolled the territorial seas and monitored the airspace around the Falkland Islands whilst conducting routine visits and reassurance to the many small settlements found throughout the islands. Unlike the first three River class she had a helicopter flight deck aft and mounted a 30mm, rather than 20mm, gun. She was ordered from VT Shipbuilding, Portsmouth, in 2005 and commissioned on 30 January 2007, under a lease from her owners, the shipbuilders. After trials and working up she sailed for the Falkland Islands which were to be her base for the next 12 years. In late 2019 she was replaced on station by *Forth*, and arrived back at Portsmouth on 20 December 2019 to be decommissioned on the same day. She was returned to her owners, now BAE Systems, and was sold to the Royal Bahrain Naval Force on 7 August 2020. (BAE Systems)

RIGHT • HMS *ARK ROYAL*

The aircraft carrier *Ark Royal* is pictured participating during an amphibious exercise off the eastern coast of the United States in April 2008. She was built by Swan Hunter, Wallsend, accepted into service on 1 July 1985, and finally commissioned on 1 November 1985. Four Olympus gas turbine engines gave the ship a maximum speed of over 30 knots. She was built with a steeper (12°) ski jump than in the earlier ships of the Invincible class, though the other two ships were retrofitted with this. In a long refit at Rosyth 1999–2001 her Sea Dart missile system was removed and the magazine reconstructed to support RAF Harrier GR7 aircraft, whilst the flight deck was extended forward. In 2003 she served as a helicopter carrier in the Second Gulf War, with RAF Chinooks of 18 Squadron, Navy Sea Kings and Royal Marines embarked, and was in company with *Ocean* and other amphibious ships. (Crown Copyright/OGL)

D32



LEFT • HMS *DARING*
The first Type 45 destroyer, *Daring*, at sea following acceptance trials in late 2008. She had been built using modular construction and assembled by BAE Systems, Scotstoun, from blocks built at Portsmouth, Govan and Scotstoun. She was launched on 1 February 2006 and commissioned at Portsmouth on 23 July 2009. She fired her first Sea Viper air defence missile in May 2011 during a test launch in the Outer Hebrides. The silo abaft the 4.5-inch gun had 48 launchers to take both short and long-range Sea Viper missiles. She was equipped with a flight deck and hangar to embark a Lynx (later Wildcat) or Merlin helicopter. In 2011 she was equipped with two Phalanx close-in weapon systems mounted on either side of the superstructure. Originally 12 ships of the class were planned, to replace a similar number of Type 42s, but defence cuts meant that only six were built. *Daring*'s first overseas deployment, to the Persian Gulf, was in 2012. (Crown Copyright/OGL)

ABOVE • HMS *ILLUSTRIOUS*
The aircraft carrier *Illustrious* off the British coast in March 2009. She was at sea with Naval Strike Wing (NSW) Harrier aircraft embarked. This wing was formed of 800 and 801 Squadrons, who were based at RAF Cottesmore, home of the Joint Force Harrier. Pictured are three NSW Harriers preparing for take-off on the flight deck, whilst one is seen leaving the ski ramp. The 1998 Strategic Defence Review had led to the Fleet Air Arm's Sea Harrier force being merged with the RAF's Harrier GR7s to form Joint Force Harrier, which operated from aircraft carriers or land bases as required. *Illustrious* served in a helicopter carrier role in 2002, in support of operations in Afghanistan. She had a long refit at Rosyth between September 2002 and late 2004, when her command and communication systems were updated and she was fitted with a third, or mizzen, mast at the after end of the island to take new radar and aerials. (Crown Copyright/OGL)

ABOVE • HMS *MANCHESTER*
The 'stretched', or batch 3, Type 42 destroyer *Manchester* in July 2009 off Peru where she was exercising with units of the US Navy. She had been built by Vickers, Barrow, and commissioned on 16 December1982, with 50 per cent of her ship's company taken from *Sheffield* and *Coventry* survivors. They found themselves returning to the Falklands region during *Manchester*'s first operational deployment, which was to the South Atlantic and the Falkland Islands in 1983–84. During the First Gulf War, in early 1991, she and her sister ship *Gloucester* were deployed as advanced air-defence pickets and close 'missile traps' inside the longer-range US Navy systems. In 2005 she was deployed to the Mediterranean for four months as part of a NATO task force and conducted counterterrorist operations. In 2009 her deployment took in the Caribbean, Colombia, Cape Verde Islands, Brazil and the Falklands, as well as Peru. She was decommissioned in February 2011. (US Navy)

RIGHT • HMS *ASTUTE*
The attack submarine *Astute* was completed nearly five years late and 53 per cent over budget. She ran contractor's sea trials in 2009 and arrived at her base port Faslane on 20 November of that year. The first of seven Astute-class boats, she had stowage for 38 Tomahawk missiles and Spearfish torpedoes, which were fired from six weapons tubes. She was able to circumnavigate the globe while submerged, and her advanced nuclear technology meant that she would never need to be refuelled. For the first time in an attack boat there was no 'hot-bunking' because all crew members had their own bunk. The normal crew was 84 but up to 98 could be accommodated. *Astute* was built by BAE Systems, Barrow, and having been ordered in March 1997 was laid down on 31 January 2001 and commissioned on 27 August 2010. First-of-class trials and rectification meant that she was not fully operational until 2014. (BAE Systems)

ABOVE • RFA *LYME BAY*
Lyme Bay off Kuwait in November 2009 with the minehunter *Chiddingfold*. *Lyme Bay* was one of four landing ship docks (LSD) built to replace the LSLs. The design was based on the Dutch *Rotterdam* but was enlarged to give greater payload. She was ordered from Swan Hunter, Tyneside, in December 2000 and due for delivery in January 2005. Her sister ship *Largs Bay* was completed two years late by Swan Hunter. *Lyme Bay* was beset by cost and schedule overruns, and during engine trials at the shipyard the crankshaft in one of her diesel engines was damaged and required replacement. The MoD cancelled the contract and in July 2006 she was towed to Govan to be completed by BAE Systems (who had built the two other ships of the class). She finally entered service on 2 August 2007. In May 2009 she started a three-year deployment in the Persian Gulf and acted as an afloat headquarters for the four RN minehunters on station there. (Crown Copyright/OGL)

RIGHT • HM Ships *MERSEY*, *TYNE* and *SEVERN*
The three River-class offshore patrol vessels of the Fishery Protection Squadron, *Mersey*, *Severn* and *Tyne* (foreground) exercising off the coast of Cornwall. They were built by Vosper Thornycroft, Woolston and completed in 2003 (*Tyne* and *Severn*) and 2004 (*Mersey*) to replace Island-class patrol vessels. To maximise sea-time each ship's company of 30 was drawn from a pool of 45 personnel on a system of rotation that had already been employed in the survey ship *Scott*. It was stated that this would give 300 days at sea – twice as many as Island-class vessels. Their principal role was to patrol the waters of the UK and up to 200 miles into the Atlantic, ensuring that fishing vessels stuck to internationally agreed quotas. Originally the vessels were leased from their builders (who were also responsible for their maintenance and support) but were purchased outright in 2012. A fourth ship, *Clyde*, was commissioned in 2007 for Falklands service. (Crown Copyright/OGL)

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CHAPTER 7

BROADENING HORIZONS 2010–2022

This was a period of mixed fortunes for the Navy. It started with a new round of cuts, brought about by the 2008 financial crisis, that was particularly devastating and demoralising since it involved the premature withdrawal of the carrier *Ark Royal* and the Fleet Air Arm's fixed-wing aircraft force as well as four valuable frigates. There would be a gap of seven years before the first of two new aircraft carriers was commissioned, and even longer before its strike aircraft became operational. Towards the end of the period the focus of the Navy's activities was beginning to shift a little, with a renewed emphasis on East of Suez operations, through a permanent presence of two patrol ships, and more single ship and task group deployments in the Indo-Pacific region. This strategy reflected growing concern about the size and perceived threat from China's armed forces, including its navy, which had more ships than the US Navy.

In 2010 defence spending was 2.7 per cent of GDP. Following the financial crisis, it reduced from 2012 onwards, getting as low as 2.3 per cent in 2018. Thereafter it increased gradually to 2.5 per cent in 2021 but was back at 2.3 per cent in 2022.[1]

The fleet in 2010 comprised the vessels listed in the table on the next page. This fleet was organised into three flotillas:

- Portsmouth Flotilla – two aircraft carriers, seven destroyers, six frigates, the 2nd MCM Squadron, Fishery Protection Squadron, 1st Patrol Boat Squadron, Fleet Diving Squadron, Gibraltar and Cyprus Squadrons, Antarctic patrol ship and the Falklands patrol vessel.
- Devonport Flotilla – one helicopter carrier, two assault ships, plus seven Type 23 and four Type 22 frigates.
- Faslane Flotilla – eight attack submarines and four Trident submarines, and the 1st MCM Squadron.

New construction underway in 2010 included one Queen Elizabeth-class aircraft carrier, four Astute-class submarines (one of which was fitting out) and five Type 45 destroyers (four of

Aircraft carriers	3	Fleet (attack) submarines	8	Offshore patrol vessels	4
Helicopter carrier	1	Destroyers	7	Ice patrol ship	1
Assault ships	2	Frigates	17	Survey vessels	5
Trident submarines	4	MCM vessels	16	Patrol/training boats	18

which were fitting out). There were considerable delays and budget overruns: completion of the first Type 45 destroyer had been three years late and 29 per cent over the original budget; and the first Astute-class submarine was completed nearly five years late and 53 per cent over budget.[2]

Royal Navy personnel numbers in 2010 totalled 28,120, including 5,790 officers; plus Royal Marines 7,020, including 800 officers. Thus, in the previous decade Royal Navy personnel had reduced by a massive 20 per cent whilst Royal Marines showed a 5 per cent increase. Royal Naval Reserves personnel totalled 2,285, including 875 officers, and Royal Marines Reserves 975, including 85 officers.[3]

In October 2010 the Navy suffered a huge shock when it was announced, as part of the defence review which cut MoD spending by 7.5 per cent in response to the Conservative government's austerity measures, that the aircraft carrier *Ark Royal* would be paid off prematurely and the Harrier force disbanded, leaving the Navy with no fixed-wing strike aircraft capability. *Illustrious* would remain in service as a commando carrier until 2014, but would then be replaced by *Ocean* on completion of the latter's refit. The last four Type 22 frigates – *Campbeltown*, *Cumberland*, *Cornwall* and *Chatham* – and RFAs *Largs Bay*, *Bayleaf* and *Fort George* would also go almost immediately, and by 2016 there would be no Sea King helicopters. One of the two assault ships would be kept in extended readiness (i.e. in reserve), whilst the other was in service. Personnel numbers would reduce by 5,000 over five years, to 30,000 including Royal Marines, and this would have to involve some compulsory redundancies. As a result of these and later decisions, there would be a gap of ten years before the first of the new carriers, with its F35B Lightning strike aircraft, would be fully operational.

All in all, it was a big blow to the morale of the Navy, and particularly disastrous for the Fleet Air Arm, whose skills base would, it was feared, be seriously eroded. The last Harriers, including GR9s from 800 Naval Air Squadron, touched down at RAF Cottesmore on 15 December 2010.[4]

The 2010 Defence Review also included a decision to extend the life of the Vanguard-class submarines to 37 years (into the early 2030s). In the following year a plan to develop a 'Trident Successor' was agreed, based on an improved Trident missile and a new class of submarines. This plan had been presaged by the decision of the Labour government in 2006 to build a new class of submarines to carry the ballistic missile nuclear deterrent, to replace the Vanguards in the 2020s. In September 2016 the first metal was cut for the first boat of what would be the Dreadnought class. Each boat is being built in 16 units in a new assembly shop at Barrow, the painted units then being transferred to the Devonshire dock hall to be combined into three 'mega-units', which will then be combined to form the submarine.[5]

In February 2011 the frigates *Cumberland* and *Westminster* and the destroyer *York* became involved in operations off Libya to enforce an embargo on arms sales, in accordance with UN Security Council resolutions. This included surveillance operations, repelling small boat activity, and boarding and inspecting merchant vessels, as part of NATO's Operation *Unified Protector*, which enforced the arms embargo and no-fly zone. A civil war in the country had placed British civilians in danger and they were evacuated from eastern Libya by *Cumberland*, which rescued 454 people, including 129 British nationals, transferring them to the safety of Malta. The escorts also delivered humanitarian aid to Benghazi and patrolled the Gulf of Sirte to keep the waters free of Libyan gunboats and prevent the entry of arms shipments. On 19 March the submarine *Triumph* launched Tomahawk missiles at Libyan government forces' positions, which was followed by strikes on the country's air defences by Tornado aircraft, in support of the rebel forces who were fighting the forces

of President Gaddafi's government regime. The minehunter *Brocklesby* was deployed to the area for mine clearance.[6]

Cumberland and *Triumph* were replaced by *Liverpool* and *Turbulent* respectively, and on her return to Devonport *Triumph* was flying the Jolly Roger, as is traditional for a submarine returning from a successful strike mission. *Liverpool* fired her 4.5in. gun to silence a shore battery which had engaged NATO warships that were intercepting two small pro-Gaddafi craft attempting to lay mines to close the port of Misrata.[7]

A task group consisting of the helicopter carrier *Ocean*, assault ship *Albion*, frigate *Sutherland*, and RFAs *Cardigan Bay*, *Mounts Bay*, *Wave Knight* and *Fort Rosalie* had left the UK for East of Suez in the spring of 2011. After amphibious exercises off Cyprus the bulk of the group was deployed in June to the Gulf of Sirte off Libya, where *Ocean* launched Army Apache gunship helicopters from 656 Squadron Army Air Corps in two missions involving precision attacks. In the first they destroyed a checkpoint and radar site in the south-east of the Gulf, and in the second they destroyed two high-speed pro-government craft and an anti-aircraft vehicle.[8] This was the first operational use of Apache helicopters from the sea, a more flexible and lower risk alternative to basing them on land.

Also flying from *Ocean* were Fleet Air Arm Sea King Mk 7 helicopters of 857 Naval Air Squadron, providing intelligence and surveillance to support the operation. Their mission was to clear a path for the Apaches – finding safe routes in and out of Libya without being spotted. They also fed back information about ground movements for analysis by headquarters. Like *Triumph*, *Turbulent* launched Tomahawk land attack missiles against regime targets ashore. Meanwhile *Brocklesby* was relieved by *Bangor*, which discovered and destroyed a mine and a torpedo lying on the seabed off the port of Tobruk.[9] In July and August *Ocean*'s Apaches, *Liverpool*, *Sutherland* and *Iron Duke* were in action, destroying numerous pro-government military targets.[10] By September and October operations were winding down, the rebel forces had taken large parts of the country and President Gaddafi had been killed. *Ocean* had withdrawn, and *Liverpool* was replaced by *York* which evacuated a further 43 entitled personnel, as well as delivering medical and food supplies to aid agencies in Benghazi.

Liverpool had been on station there for five months, operating close to the coast in the face of repeated attacks from pro-Gaddafi forces, and in return her naval gunfire support was employed to bombard rocket batteries, military vehicle checkpoints and other targets, and to fire illumination rounds as a psychological weapon. Her 4.5in. gun had opened fire on 12 occasions, firing a total of 111 high-explosive rounds and 98 star-shells, and she had controlled aircraft of the NATO-led coalition from the sea. The ship's fighter controllers directed 14 different types of aircraft for more than 280 hours, ensuring continuous coverage of the no-fly zone. RFAs *Wave Knight* and *Orangeleaf* kept Royal Navy and coalition warships on station off Libya refuelled: for example, *Liverpool* had undertaken 29 replenishments. The stores ship RFA *Fort Rosalie* provided stores and ammunition, and performed a vital shuttle service between the area of operation and NATO bases in the Mediterranean.[11]

Elsewhere, there was an enduring presence in the Persian Gulf and northern Indian Ocean with, typically, two escorts, a submarine and MCMV, supported by RFAs, on counterpiracy work off Somalia and counterterrorism work. There was also usually at least one of the two coastal survey ships (*Echo* and *Enterprise*) operating in the area. The anti-piracy patrols were part of NATO's Operation *Ocean Shield*, which started in 2009, and by 2011 the number of piracy incidents had halved. In 2011 a four-month-long surge operation by the Royal Navy disrupted the activities of seven pirate groups, freed 43 sailors being held captive aboard ships, handed over 36 suspects to Italian and Seychelles authorities for prosecution, and seized two dhows, two whalers and six skiffs. The ships involved were RFA *Fort Victoria* with Royal Marines commandos and a Lynx helicopter from 815 Naval Air Squadron embarked, and the frigate *Somerset*.[12]

In the early hours of 22 October 2010 the newly completed submarine *Astute*, first of her class, ran aground on a shingle bank between the mainland and the Isle of Skye when undergoing sea trials. The board of inquiry into the incident found that the officer of the watch on the bridge was not using the right radar, did not have a chart, was unused to navigating in the dark, and failed to alter course when advised to do so.

The submarine was late for a rendezvous with another ship and ended up cutting a corner to try to get to the right position at the right time. The boat's primary radar was not in use because it was 'emitting noise', though it was still fully operational. Once *Astute* grounded, senior officers failed to take appropriate action, probably because of the gentle nature of the grounding. To the Navy's embarrassment pictures of the submarine on the shingle bank close to the Skye road bridge appeared in the media. Early attempts to refloat the submarine failed and damage to the fore-planes was caused when the towing vessel *Anglian Prince* hit *Astute*. The boat was finally refloated after ten hours on the bank. Three officers in *Astute* faced disciplinary action including the captain, Commander Andy Coles, who left his post a month after the incident.[13]

Unfortunately there was more trouble, and tragedy, in store for *Astute*. On 8 April 2011 when the boat was berthed in Southampton on an official five-day courtesy visit, Able Seaman Ryan Donovan shot dead Lieutenant Commander Ian Molyneux whilst the city council's mayor, chief executive and leader were being given a tour of the submarine. He used an SA80 assault rifle which he had been issued with because he was on sentry duty. He also shot and badly injured Lieutenant Commander Christopher Hodge, and attacked two petty officers, who luckily dived for cover, shooting four times. His murderous rampage was only stopped when the council's leader and chief executive leapt on him in the submarine's control room. Eight and a half hours earlier, at 3.30am, he had returned to his hotel in a drunken state after a drinking spree and went back aboard the submarine eight hours later before taking up the sentry duties at noon. He was aggrieved following punishment for an incident in which he had disobeyed orders, and had boasted that he would carry out a 'massacre' in the submarine. Donovan's case was heard in a civilian court and he was given a life sentence, with a minimum of 25 years in prison.[14]

It was reported in November 2012 that there were serious problems with *Astute*'s propulsion system which meant that she could not achieve her designed speed of over 30 knots submerged. This was said to be due to a mismatch between the nuclear reactor, which was based on that used in the larger Vanguard-class Trident submarines, and the steam turbines that the reactor feeds, which were based on those in the earlier, smaller, Trafalgar class. One source likened the combination to a 'V8 engine with a Morris Minor gearbox'. The boat had also been beset by a variety of other problems since it came into service, though the Navy claimed this was not unusual for the first-of-class, especially given the complexity of a nuclear submarine, and such problems and defects would be resolved.[15]

Commander Sarah West became the first woman to command a major British warship in May 2012, when she assumed command of the frigate *Portland*. She left the ship during a seven-month deployment to the Caribbean in mid-2014, after allegations that she had had an affair with one of her officers, a breach of the code of social conduct on board the ship.[16]

On a more positive note, in May 2014 three women became the first female submariners in the 110-year history of the Royal Navy's submarine service. Lieutenants Maxine Stiles, Alexandra Olsson and Penny Thackray earned their 'dolphins' badges after months of training, including operations in the Trident submarine *Vigilant*.[17]

In February and April 2013 the Royal Marines of 40 Commando left Helmand province in Afghanistan, ending seven years of Royal Marines deployment in the NATO security force in the country. The final deployment, lasting four months, had involved training members of the Afghan National Security Forces in preparation for the handover of the region to Afghan forces.[18] Between 2006 and 2012 a total of 55 Royal Marines, including three officers, died in hostile activities in Afghanistan.[19]

The new Type 45 destroyers suffered from embarrassing engine failures owing to the unreliability of the integrated electric propulsion system. They suffered from almost complete power generation failures because their intercooler-recuperators, which recover heat from the exhaust and recycle it into their engines, did not work properly.[20] The problem could cause the ships' two WR-21 gas turbines to fail. The electrical load on their two diesel generators could then become too great, causing them to 'trip out', leaving the ship with neither power nor propulsion, as happened on a number of occasions, first reported in *Daring* in 2009. Amongst other such failures *Dauntless* lost

power during an exercise in 2014 and *Dragon* had to be towed back to Devonport after breaking down during an exercise off the Devon coast in November 2016.[21] Eventually it was decided to replace the diesel generators in the ships, with the work being undertaken by Cammell Laird, Birkenhead. The first to be modified, *Dauntless*, was taken in hand in May 2020 for the rectification work, which badly overran the planned completion date. *Daring* was sent to Birkenhead in September 2021, but the continued delays led to the work on *Dragon* being allocated to Portsmouth in April 2022.[22]

The second Astute-class submarine, *Ambush*, was badly damaged on 20 July 2016, when she struck the underside of a merchant ship near Gibraltar. The upper forward part of her fin (conning tower) was crushed and the sonar dome on the fore-casing was damaged. The boat was under the control of a trainee submarine commander, as part of the 'Perisher' course, practising controlling the submarine at periscope depth. The subsequent court-martial found that the 'teacher', Commander Justin Codd, was focused on teaching other students and had not made adequate observations of the surface picture himself, despite the submarine having two periscopes, instead relying on the images provided by his students. They had focused on the yacht *Katharsis* and had not identified the risk posed by the tanker MV *Andreas*, which was 'loitering' in the nearby area. Action taken to avoid the yacht took *Ambush* onto a collision course with the merchant ship. Codd's sentence was a loss of a year's seniority. *Ambush*'s captain, Commander Alan Daveney, was also on board at the time of the accident but was not court-martialled.[23]

Looking ten years ahead, the 2015 Security and Defence Review, published in November of that year, promised some stability for the Navy, which would be focused around three pillars – a carrier task group, the strategic nuclear deterrent and the amphibious warfare force. No cuts were announced and the Navy's personnel numbers would grow by a very modest 40. It *promised* that the destroyer and frigate force would remain at 19 ships after years of reductions. The 13 Type 23 frigates would be replaced by eight Type 26 and five of the smaller Type 31. After 2030 it might be possible to increase frigate numbers. The project to build and equip four 'Successor' ballistic missile carrying submarines (SSBN) would press ahead, but the first would not enter service until the early 2030s. Two Lightning II F35B squadrons were being formed – 617 Squadron RAF and 809 Naval Air Squadron. In total it was planned to build 138 Lightnings for the RAF and Fleet Air Arm. Nine Boeing P8 maritime patrol aircraft would be ordered to provide protection surveillance for the SSBNs, plugging a gap left by the 2010 Defence Review. In addition to the four Tide-class fast replenishment tankers under construction, three new stores ships would be built to replace the ageing Fort classes.[24]

To accommodate the new aircraft carriers a £100 million upgrade of Portsmouth Naval Base was started in 2013. This included dredging a deeper channel on both sides of the harbour mouth, providing a deep-water mooring for the carriers off Stokes Bay, rebuilding Middle Slip Jetty and improving Victory Jetty to create modern berthing facilities, installing new cranes and power supply, improving access to No. 3 Basin with new caissons, and upgrading the base's facilities. On completion of all the work Middle Slip Jetty was renamed Princess Royal Jetty by Princess Anne at a ceremony there on 20 March 2017. Coupled with the rebuilt Victory Jetty it meant that both carriers could be in port simultaneously. *Queen Elizabeth* arrived in Portsmouth for the first time on 17 August 2017 and berthed at Princess Royal Jetty.[25] This was five years later than her original planned in-service date of 2012.

The carrier's first transatlantic deployment, from August to December 2018, saw the landings of two F-35B Lightning II test aircraft, from the USA's Integrated Test Force based at Naval Air Station Patuxent River, Maryland, on 25 September. During the development trials which ensued, the jets conducted 202 take-offs from the ship's ski ramp, 187 vertical landings, and 15 shipborne vertical landings. They also dropped 54 inert bombs, testing the weight loading in a variety of weather conditions and sea states.[26]

The second carrier, *Prince of Wales*, put to sea from Rosyth for the first time on 23 September 2019 for sea trials,[27] and was commissioned at Portsmouth on 10 December (five years later

than her original planned in-service date). *Queen Elizabeth* became operational in June 2020 following successful completion of operational sea training with Lightnings embarked, and the Lightnings of 617 Squadron became operational in September 2020 when they were embarked for exercises in the North Sea.[28]

In April 2019 the Ministry of Defence was strongly criticised in a National Audit Office report for failing to deal with the disposal of the 20 retired nuclear submarines which have left service since 1980, saying progress was dismal and costs were spiralling. The boats were stored at Rosyth and Devonport, and none of them had been fully defueled or dismantled. Each decommissioned submarine cost £12 million a year to store and maintain, and the cost of scrapping each submarine was £96 million. Two boats, *Resolution* and *Swiftsure*, were being dismantled but the MoD did not have a fully funded process to remove, transport and store all types of radioactive parts. Nine boats had not had irradiated fuel removed.[29]

From June 2020 major Royal Navy vessels could berth at the UK's base in Bahrain after waterfront facilities were revamped. Shallower draft ships such as minehunters had been using the quayside at the UK Naval Support Facility in Bahrain, HMS *Jufair*, since it opened two years earlier – allowing them much easier access to engineering support and fresh supplies, and giving their crews easier access to recreation and leisure facilities. But larger ships such as Type 23 frigates and Type 45 destroyers had to use other jetties. *Argyll* – one of two Type 23s then operating out of Bahrain, the other being *Montrose* – christened the new facility.[30]

A larger logistics support facility for the Royal Navy in Duqm, Oman, was also built as part of a new naval dockyard (a joint venture between the Oman Drydock Company and Babcock International). It had the capability to dry dock the Queen Elizabeth-class aircraft carriers if necessary.[31] The UK Ministry of Defence said that Duqm conveyed a strategic advantage for Britain's East of Suez naval presence. It is located on the Arabian Sea, near enough to geopolitical hot spots in the Arabian Gulf to be useful, but still on the Indian Ocean side of the Strait of Hormuz. Iran periodically threatens to close this narrow choke point in retaliation for American or NATO allies' sanctions, and Duqm's accessibility would be less affected in the event of a closure.[32]

On 22 May 2021 *Queen Elizabeth* sailed from Portsmouth for her maiden operational deployment, at the heart of the UK's Carrier Strike Group. Following exercises off the Scottish coastline, the ships of the Carrier Strike Group had dispersed briefly before sailing for their deployment to Japan and back, over seven months, said to be the Navy's most important peacetime deployment in a generation. The task group visited or interacted with 42 nations including India, Japan, Republic of Korea and Singapore and covered 26,000 nautical miles. It also took part in exercises with French carrier *Charles de Gaulle* in the Mediterranean, as well as navies and aircraft from allies such as the US, Canada, Denmark, Greece, Israel, Italy, Japan and the UAE. While in the Pacific, the strike group marked the 50th anniversary of the Five Powers Defence Arrangements between Malaysia, Singapore, Australia, New Zealand and the UK by taking part in Exercise *Bersama Lima*.

Accompanying *Queen Elizabeth* on the deployment were the destroyers *Diamond* and *Defender*, frigates *Richmond* and *Kent*, submarine *Artful*, and RFAs *Fort Victoria* and *Tidespring*. The Dutch frigate *Evertsen* and American destroyer *The Sullivans* were also part of the strike group. More than 30 aircraft were embarked across the task group, including just eight F-35B jets from 617 Squadron and ten from the US Marine Corps, Wildcat helicopters from 815 Naval Air Squadron and Merlin helicopters from 820 and 845 Naval Air Squadrons. Royal Marines from 42 Commando also deployed with the carrier.[33]

On Sunday 20 June, two F-35B jets of 617 Squadron, flying from *Queen Elizabeth* in the Mediterranean, took off to conduct combat missions against Daesh in Syria and Iraq. This was the first strike mission from a Royal Navy ship since the operations against Colonel Gaddafi in Libya during 2011. British and American aircraft from the carrier then mounted the 'lion's share' of missions as part of Operation *Shader*, and thus provided relief for the RAF Typhoon force based in Cyprus that had been involved in this campaign since December 2015.[34] It was also

notable as the first combat mission flown by US aircraft from a foreign carrier since HMS *Victorious* in the South Pacific in 1943.[35] Unfortunately in early July the destroyer *Diamond* suffered an engine failure and had to leave the strike group to berth at the NATO facility in Augusta, Sicily, for repairs.[36]

In October 2020, *Prince of Wales* experienced significant flooding from a burst fire main that left the engine room and electrical cabinets submerged for over 24 hours and caused damage to her electrical cabling. She was confined alongside for six months whilst repairs were made.[37]

In March 2021 a defence review announced the creation of a littoral response group capability, with one group deployed in northern Europe in 2021 and one in the Indo-Pacific region in 2023, facilitated by the conversion of one Bay-class ship. This would allow a Royal Marines commando force to be deployed overseas for longer periods of time. Two new multi-role support ships for littoral strikes would be built by the early 2030s. New Type 32 frigates would enter service in the 2030s, increasing the total number of frigates (possibly by five). A multi-role ocean surveillance ship was to be built, to protect important underwater communication cables. The new Batch 2 River-class offshore patrol vessels were being deployed overseas – one each in the Caribbean, Falklands and Gibraltar/Mediterranean and two in the Indo-Pacific region. Autonomous minehunting systems would replace the existing minehunters of the Hunt and Sandown classes.[38]

The review contained much hype, and for the Royal Navy there was little or nothing that had not already been announced. It was stated that defence spending would be 'at least' 2.2 per cent of GDP over the next four years – that figure being a slightly lower percentage than in previous years.[39]

It was also announced that two Type 23 frigates (*Montrose* and *Monmouth*) would be withdrawn from service, breaking the promise of the 2015 review that the destroyer and frigate force would remain at 19 ships. Thus by 2023 the fleet would reduce to 31 warships of frigate or submarine size or above.

In December 2019 *The Times* reported that the Navy's Whale Island, Portsmouth, headquarters, staffed by around 400 military and civilian personnel, was to be drastically reduced over the next year, with defence sources saying this was expected to translate into a 45 per cent to 50 per cent cut in personnel:

> 'The first sea lord [Admiral Tony Radakin] wants sailors transferred to crew ships and submarines, not manning desks in Portsmouth,' said a naval source… Radakin has also ordered an end to the job for life culture among middle ranking officers, with new employment rules for more than 200 captain-ranked officers … being brought in. Previously they could serve automatically until the age of 55. In future they will have to retire if they are not selected for a new job after completing two three-year postings. This could lead to scores of officers retiring early in their mid-forties and allow dozens of desk jobs to be cut… The navy has long been criticised for having more admirals than warships and the new defence secretary, Ben Wallace, has lambasted navy chiefs for the number of ships and submarines stuck in harbour awaiting repairs or lacking crews.[40]

In September 2021 the first sea lord announced,

> We are shifting 15 per cent of our workforce from shore to sea. We are changing the promotion system to be more skill-based than experience-based, allowing our extremely talented workforce to advance more quickly. We will employ multiple crew models on more ships and submarines to improve stability and certainty for our people, as well as availability [of ships]… and less churn [in personnel].[41]

The problem of numbers of senior officers certainly needed to be addressed. In the nine years from 1 April 2012 to 1 April 2021 the number of flag officers (commodore, brigadier and above) in the Royal Navy and Royal Marines increased from 121 to 127, an increase of 5 per cent, despite reductions of 3 per cent in the total number of officers, 5 per cent in the numbers of other ranks, and cuts to the number of major ships in service.[42] Since Radakin's reported statements in December 2019 the

number of flag officers had actually increased from 119 to 127, and the number of RN captains had increased from 220 to 235.[43]

On 1 October 2021 the Navy had 35 admirals (two admirals, eight vice admirals and 25 rear admirals), and 69 commodores. Despite recent cuts to the number of admirals (including five of the 14 at the Fleet Headquarters on Whale Island, Portsmouth[44]) there was an admiral and at least two commodores for every major ship, (i.e. frigate size and above), even if the fact that at least nine of the 33 major ships and submarines were out of service was ignored. The Royal Fleet Auxiliary had two commodores. The Royal Marines had five senior officers of admiral equivalent rank (two lieutenant generals and three major generals) and 19 brigadiers (commodore equivalent).[45]

The appointment of the Navy's first female admiral – Rear Admiral Jude Terry – was announced in June 2021, her appointment being as Director of People and Training; there were also six women of commodore rank and 19 female captains.[46]

An extraordinary fact is that of the 230 captains in the Royal Navy in January 2022 only four had sea-going commands: *Queen Elizabeth*, *Prince of Wales*, *Albion* and *Protector*. A fifth was in command of the submarine *Anson*, which was still fitting out. Of the 900 commanders only 30 had sea-going commands.[47]

Overall personnel numbers (RN and Royal Marines) stood at 33,920 on 1 January 2022, of which 29,400 were trained. This was about 4 per cent below the required strength.[48]

Overall, 4.8 per cent of personnel were of Black, Asian and minority ethnic (BAME) groups.[49] Since 1 April 2011 there had been a small increase in this representation, up from 3.5 per cent.[50] This was still well below the 14 per cent BAME representation in the UK working age population.[51] In the RN 5.3 per cent of personnel were BAME (amongst officer ranks only 2.1 per cent, other ranks 5.9 per cent). In the Royal Marines only 3.0 per cent were from BAME groups (amongst officer ranks 2.9 per cent, other ranks 3.1 per cent). In both the RN and Marines, the BAME representation amongst senior grades of both officers and other ranks was very low.[52] The most senior rank achieved by the BAME community was captain in the RN, and major in the Royal Marines.[53]

In the RN 12.3 per cent of all personnel were female (amongst officer ranks 13.8 per cent, other ranks 11.9 per cent); whilst in the Royal Marines only 1.9 per cent were female (and no female officers were recorded). Since 1 April 2011 there had been a slight decline in overall female representation, down from 11.7 per cent to 11.3 per cent.

In July 2021 the first group of three autonomous minehunting and minesweeping launches was introduced to service at Faslane, following trials of the type, which was intended to replace the existing minehunters of the Hunt and Sandown classes. Controlled remotely from either a ship or land command station, they could be used to detect and classify mines or ordnance dumped in the sea, without putting sailors and a multi-million-pound warship in danger.[54] Reductions in the size of the traditional minehunter force continued in the following month with the decommissioning of *Blyth* and *Ramsey*.

In 2021 Basic Operational Sea Training (BOST), which for 70 years had prepared ships which were just out of refit, reserve or the builder's yard for operational service, was replaced by a new process in which the first two weeks was spent on Operational Sea Safety Training (OSST), embracing the basics of seafaring and safely taking a ship to sea. Then followed Warfighting Operational Sea Safety Training, focusing on the ship's specific mission: air defence, submarine hunting, maritime security, or minehunting, etc. This training could be delivered to any ship worldwide rather than, as previously, at Devonport or Faslane, and catered for the regular personnel changes on ships with rotating crews. The first

Aircraft carriers	2	Destroyers	6	Offshore patrol vessels	8
Assault ships	2	Frigates	12	Patrol/training boats	19
Trident submarines	4	MCM vessels	11	Survey vessels	4
Fleet submarines	6	Ice patrol ship	1		

ship through the new system was the frigate *Portland*, which had emerged from a long refit.[55]

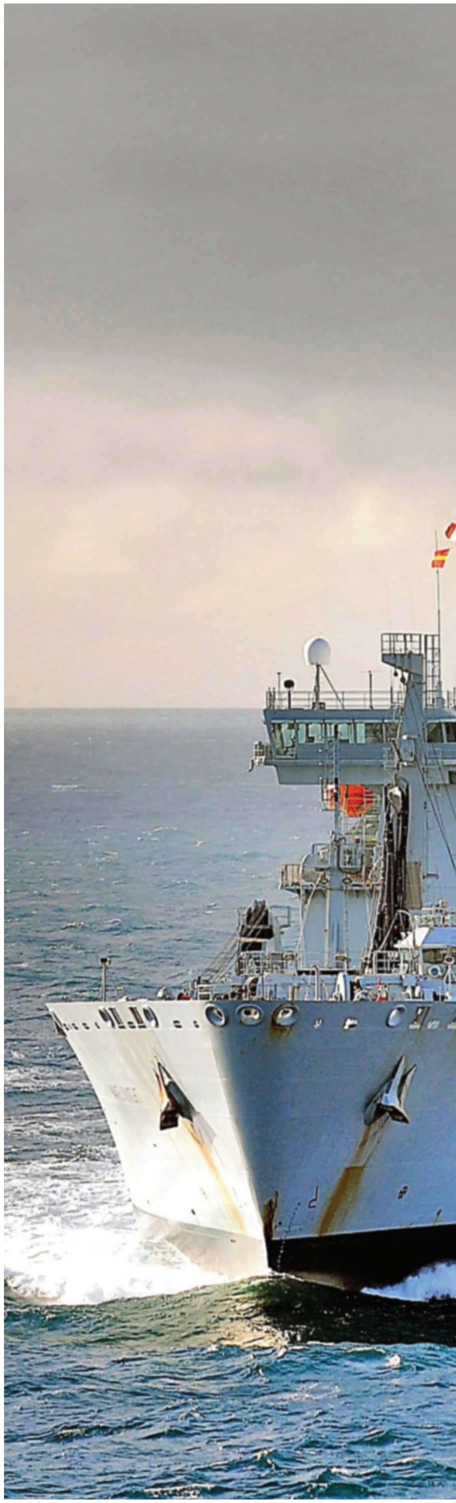
The composition fleet at the start of 2022 is given in the table on the previous page. As well as its NATO role in the eastern Atlantic, the Navy retained the capability to operate in overseas theatres such as the Middle East, Far East and the South Atlantic. In addition to the Navy's main bases of Portsmouth, Devonport and Faslane, and the dockyard at Rosyth, there were smaller support facilities at Bahrain, Singapore, the Falkland Islands and Gibraltar. There were now just two Royal Naval Air Stations – at Yeovilton and Culdrose.

The Royal Fleet Auxiliary consisted of five tankers and one fleet stores ship, all for underway replenishment at sea, one primary casualty reception ship, and three landing ship dock auxiliaries.

New construction underway included two Dreadnought-class submarines, three Astute-class submarines (one of which was fitting out), three Type 26 frigates, one Type 31 frigate and one patrol boat.[56]

After 70 years of steep decline the Navy finds itself beset by problems and challenges. There are too few escorts and attack submarines to protect the aircraft carriers and Trident submarines, and the fleet could certainly not mount an independent operation of the size seen in the 1982 Falklands conflict. Commitments in the South Atlantic, Middle East and Caribbean, as well as the eastern Atlantic and pressure points such as the Black Sea, mean that the Navy is too thinly spread. Anti-submarine forces to protect North Atlantic trade are woefully short, especially in view of the worsening international security climate. This overstretch is not helped by the recent decision to maintain a permanent presence in the Indo-Pacific region, though the present force of two poorly armed patrol vessels is unlikely to strike fear in the hearts of the Chinese. There are insufficient aircraft to allow both aircraft carriers to embark squadrons of F35B fighters. The pace of new ship construction is glacial and the new surface warships are under-armed when compared to those of many other navies. There are insufficient personnel to man even the small number of ships the Navy now possesses, too many personnel are not in sea-going posts, morale is reportedly quite low and there is a chronic overstaffing of 'top brass'.

Many of these problems are recognised by the Navy and the Ministry of Defence, and there are said to be plans to address some of them. An increase in the defence budget, better control of procurement and solutions to the personnel problems will be needed if those plans are to be successful.



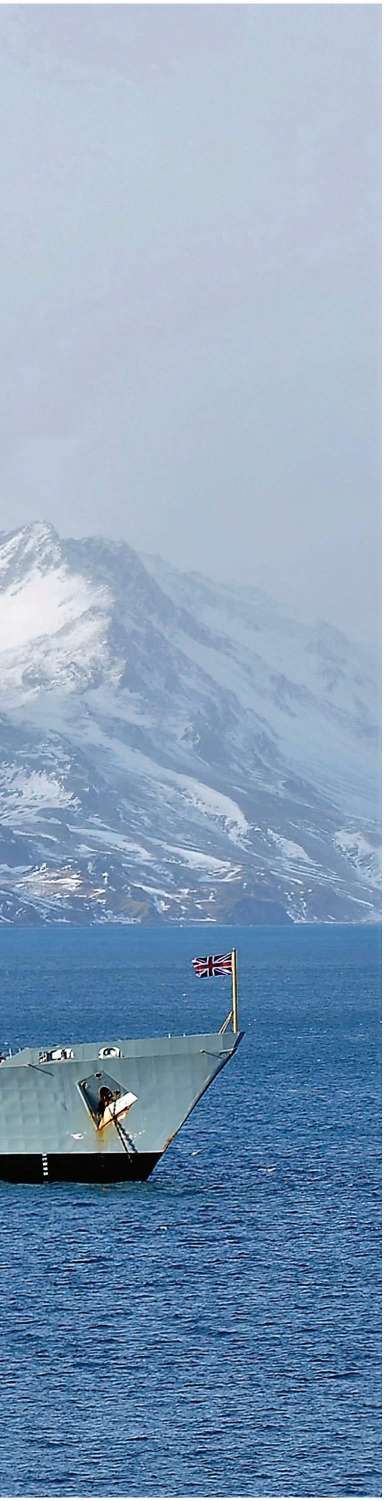
RIGHT • RFA *WAVE KNIGHT* and HMS *ARK ROYAL*
The fast fleet tanker *Wave Knight* refuels the aircraft carrier *Ark Royal* in the North Sea, 1 March 2010. *Wave Knight* was built by BAE Systems, Barrow, having been ordered from what was then Vickers Shipbuilding & Engineering in March 1997, and was accepted into service in 2003. In summer 2011 she and RFA *Orangeleaf* kept RN and coalition warships off Libya refuelled whilst undertaking operations during the civil war. In January 2013 she sailed from Portland for a six-month deployment as Atlantic Patrol (North) in the Caribbean to conduct anti-narcotic operations and was on standby to provide humanitarian aid for the hurricane season. She repeated these duties in 2016 and 2021, and assisted the international aid effort following the 2021 Haiti earthquake. In this latter deployment she delivered disaster relief packages, constantly refuelled American Black Hawk helicopters on rescue work, and carried a Crisis Response Troop from 24 Commando Royal Engineers who could put up bridges, fix water supplies and get generators working again. (Crown Copyright/OGL)

WAVE KNIGHT

ABOVE • HMS *CATTISTOCK*
The Hunt-class minehunter *Cattistock* off Hartlepool in August 2010 whilst representing the Royal Navy at a tall ships' festival. She was built by Vosper Thornycroft, Woolston, and commissioned on 5 March 1982. From February to June 2013 *Cattistock* led NATO's Standing MCM Group 2 deployed to the Mediterranean. In an upgrade programme by BAE Systems, Portsmouth, between 2012 and 2018, the Napier Deltic diesels in the remaining Hunts were replaced by Caterpillar diesel engines, together with new gearboxes, bow thrusters, propellers and control systems. The PAP 104/5 remote controlled submersible mine disposal system was replaced by Sea Fox, capable of destroying mines in depths of up to 300 metres, and improved sonar (Type 2193) was fitted. After her 18-month-long refit *Cattistock* returned to service in November 2015. From January to April 2018 she was part of NATO's Standing MCM Group 1 deployed in the Baltic. The 2021 defence white paper announced that the remaining Hunt-class ships would be withdrawn in 2029–31. (Paul Brown)

RIGHT • HMS *KENT*
The Type 23 frigate *Kent* seen south of the Isle of Wight in October 2010. Built by BAE Systems, Scotstoun, and launched on 27 May 1998, she was commissioned on 8 June 2000. From July to October 2013 she deployed to the Horn of Africa on anti-piracy and anti-drug missions, and from October 2014 to May 2015 the Persian Gulf. In December 2016 she started an upgrade at Devonport and recommissioned at Portsmouth, her home port, on 5 October 2018. In August 2019 *Kent* again deployed to the Persian Gulf to protect merchant shipping in the Strait of Hormuz. In 2021 she escorted the *Queen Elizabeth* carrier strike group on the seven-month East of Suez deployment. Her principal role, with sister ship *Richmond* and the helicopters of 820 Naval Air Squadron, operating from the flight deck of *Queen Elizabeth*, was to track any potential underwater threats to the force as it passed from the Atlantic through the Mediterranean and into the Indian and Pacific Oceans. (Crown Copyright/OGL)

D97

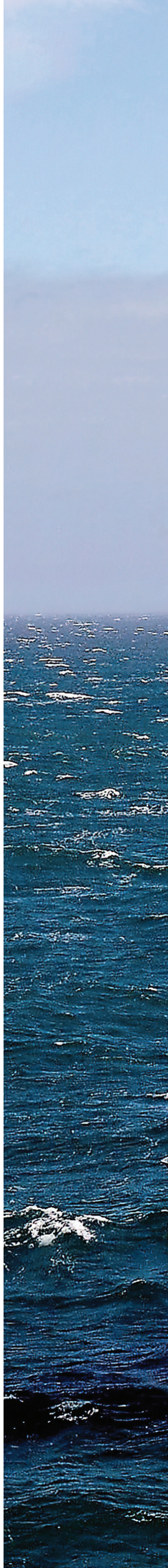


LEFT • HMS *EDINBURGH*
Edinburgh was the last Type 42 to be refitted. The refit included a renewal of crew living quarters, catering facilities and laundry equipment, and two of her four gas turbine engines were replaced. She emerged from her refit at Portsmouth in September 2010 to undergo sea trials and was formally accepted back into the fleet in late October 2010. In April 2011 she successfully completed Sea Dart missile firing trials, and in May 2011 began an eight-month deployment to the South Atlantic and Falklands. She is seen in South Georgia on 13 August 2011. On 13 April 2012 she fired the Royal Navy's last ever operational Sea Dart missiles after their service of 39 years, having first appeared on *Bristol* in 1973. *Edinburgh* arrived in Portsmouth for the last time on 31 May 2013 and was decommissioned there on 6 June after 27½ years' service. In 2015 she was sold for breaking up in Turkey. (Crown Copyright/OGL)

ABOVE • HMS *SABRE*
Sabre, a Scimitar-class patrol boat based in Gibraltar, seen in March 2011 when escorting the frigate *Monmouth* into the port. *Sabre* and her sister ship *Scimitar* formed the core of the Gibraltar Squadron. A small team – the two patrol boats, 19 personnel, and three Arctic 24 rigid-hulled inflatable boats – was permanently deployed to safeguard Gibraltar's waters, while contributing to joint operations. In addition, the Gibraltar Squadron provided a maritime Quick Reaction Force to support ships in the local area and kept a watchful eye over shipping passing through the Strait of Gibraltar. The craft of the squadron often supported British and NATO exercises in the region, and other nations' maritime forces. *Sabre* and *Scimitar* were completed in 1988 by Halmatic as *Greywolf* and *Greyfox* respectively for counterterrorism duties on Lough Neagh, Northern Ireland, until transferred to Gibraltar in 2003 and renamed. In September 2020 they returned to the UK, having been temporarily replaced by *Dasher* and *Pursuer*, and finally paid off on 30 March 2022. (Crown Copyright/OGL)

ABOVE • HMS *CUMBERLAND*
The Type 22 frigate *Cumberland* cuts through the Indian Ocean as sister ship *Cornwall*'s Lynx helicopter flies across her bow. The two Type 22 frigates met in the Indian Ocean in early 2011 when *Cornwall* was the command platform for the multinational anti-piracy Combined Task Force 151 in the Middle East. *Cumberland* was the RN's Operation *Telic* vessel. On 25 May 2009 she had deployed from Devonport to the Gulf of Aden and Horn of Africa region for counter-smuggling (arms and drugs), counterterrorism and counter-piracy work. Her newly installed Pacific 24 sea boats (two of which can be seen) allowed the ship's embarked Royal Marines and RN boarding teams, in conjunction with the Lynx aircraft, to intercept and board vessels suspected of being involved in these activities. In her first seizure of narcotics during the deployment, as part of the anti-narcotics/anti-terrorism Combined Task Force 150, *Cumberland* seized 12.4 tonnes of cannabis being smuggled in a dhow, whilst patrolling the so-called 'Hash Highway'. (Crown Copyright/OGL)

ABOVE • HMS *VICTORIOUS*
The Trident submarine *Victorious* near Faslane, March 2013. In that year she completed the UK's 100th deterrent patrol by a Vanguard-class submarine. By this time her Trident intercontinental missiles were detargeted, that is they were not aimed at any country in peacetime. The necessary targeting information would be quickly added if needed in a crisis. She could dive to depths of more than 250 metres. When they were on patrol, the defensive ring around the Navy's Trident submarines included Merlin Mk 2 helicopters from Royal Naval Air Station Culdrose, Nimrod MR2 maritime patrol aircraft armed with Stingray torpedoes and Harpoon anti-ship missiles from RAF Lossiemouth, Type 23 frigates, and A- or T-boat attack submarines. The Nimrods were replaced in 2020 by Poseidon P8 aircraft armed with Mk 54 lightweight torpedoes and Harpoon missiles. *Victorious* was built by Vickers Shipbuilding & Engineering, Barrow, laid down on 3 December1987, launched on 29 September 1993 and commissioned on 7 January 1995. (Crown Copyright/OGL)



ABOVE • HMS *AMBUSH*
The second Astute-class attack submarine, *Ambush* (motto: *Hide and Seek*), seen near Faslane on 15 July 2013, four months after she was commissioned on 1 March. She was built by BAE Systems Submarines, Barrow, and armed with Tomahawk land attack missiles and Spearfish heavyweight torpedoes. Her nuclear reactor would never need refuelling during her planned 25-year service period, while the ability to purify her own water and air mean that her range was limited only by the amount of food on board. As a result, she could circumnavigate the globe without resurfacing. On 20 July 2016, whilst under the control of a trainee submarine commander, *Ambush* was badly damaged when she struck the underside of a merchant ship near Gibraltar. The upper forward part of her fin was crushed and the sonar dome on the forecasing was damaged. The 'teacher' commander who was supervising trainee commanders was sentenced to forfeiting a year of seniority for negligently hazarding the vessel. (Crown Copyright/OGL)

RIGHT • HMS *DIAMOND*
The Type 45 destroyer *Diamond* pictured during Exercise *Joint Warrior*, off Scotland, April 2013. She had sailed to meet the rest of the task force near Cape Wrath for a combined amphibious landing forces exercise. She performed the air defence role as Royal Marines from 42 Commando stormed the remote area by landing from the sea and air, under the cover of warship firepower. The Marines were being landed from *Illustrious* and *Bulwark*. *Diamond* also 'attacked' enemy positions on land by providing naval gunfire support from her 4.5in. gun. More than a dozen RN surface warships and submarines were committed to this annual war game, joined by more than 30 warships from other navies, 40 fixed-wing aircraft and 30 helicopters. Alongside RN, RAF and Army personnel taking part in Joint Warrior, forces from Canada and eight European countries were involved – nearly 12,000 military personnel in all. (Crown Copyright/OGL)

D34

ABOVE • HMS *ECHO*
An Australian Orion maritime patrol aircraft flies over the survey ship *Echo* during the search for the missing Malaysian Airlines' Flight MH370 in the Indian Ocean, March 2014. *Echo* was built by Appledore Shipbuilders and commissioned in March 2003. She could carry out a wide range of survey work, including support to submarine and amphibious operations, through the collection of oceanographic and bathymetric (analysis of the ocean, its salinity and sound profile) data. Her survey motorboat could operate independently, supporting a small group of surveyors who could live and work ashore. *Echo* was the first RN ship equipped with azimuth thrusters, with propellers in a 360° swivelling pod, allowing for precise manoeuvring. She was also equipped to support mine warfare vessels, and could carry a small detachment of Royal Marines. She operated a lean-manned three-watch rotation system with a total ship's company of 72, with 48 on board at any one time and was available for operations for more than 334 days each year. She was paid off in June 2022. (Crown Copyright/OGL)

RIGHT • HMS *VIGILANT*
The Trident submarine *Vigilant* returns to Faslane from a patrol, 17 April 2014. She was built by Vickers Shipbuilding & Engineering, Barrow, having been laid down on 16 February 1991 and commissioned on 2 November 1996. It was reported that there was a safe in the control room containing an inner safe that only the commanding officer and executive officer could open. In that safe was a letter from the current UK prime minister, the letter of last resort, which contained guidance and orders to be followed should the United Kingdom be attacked with nuclear weapons. In October 2017 it was revealed that *Vigilant*'s captain had been relieved of his command following allegations of an inappropriate relationship with a female crew member. His executive officer was also removed from his post amid allegations of an improper relationship with a different female crew member. Later that month, it was reported that nine crew members had been dismissed for misusing cocaine. (Crown Copyright/OGL)

ABOVE • HMS *TRACKER*
The patrol boat *Tracker* escorts the Trident submarine *Vigilant* as she returns to Faslane from an extended deployment, 17 April 2014. In 2012 *Tracker* and *Raider*, Batch 2 Archer-class boats built by Ailsa Shipbuilding, Troon, and completed in 1998, replaced the Batch 1 boats *Pursuer* and *Dasher* in the Faslane Patrol Boat Squadron, which the latter two boats had created in 2010. *Raider* and *Tracker*, previously used for University Royal Naval Unit training, underwent an upgrade which saw them fitted with Kevlar armoured ballistic protection and three 7.62mm general purpose machine guns, to become fully fledged armed patrol boats able to fulfil the core mission of escorting and protecting high value shipping in the Firth of Clyde, including all submarine movements, as well as other tasking on the west coast of Scotland. They had more powerful and faster engines (turbocharged MTU diesels) than the Batch 1 boats, with a sustainable top speed of 24 knots in suitable sea conditions, and each had a crew of seven. (Crown Copyright/OGL)

RIGHT • HMS *ATHERSTONE*
The Hunt-class minehunter *Atherstone* seen alongside at her base in No. 2 Basin, Portsmouth Naval Base, when she was part of the 2nd MCM Squadron. Between 2013 and 2015 she was deployed to the Persian Gulf as part of the 9th Mine Countermeasures Squadron based at Bahrain, during Operation *Telic*. She returned to Portsmouth in December 2015 and, after spending a period alongside in extended readiness, was lifted out of the water into the Minor War Vessels Centre of Specialisation, the former VT shipbuilding hall at Portsmouth, in December 2016, in readiness to enter a long refit upgrade similar to that undertaken on *Cattistock* and other members of her class. However, in October 2017 it was revealed that the planned refit would not take place, and *Atherstone* was decommissioned on 14 December 2017. She had originally been built by Vosper Thornycroft, Woolston, and accepted into service on 28 November 1986. (BAE Systems)

A173
PROTECTOR

LEFT • HMS *PROTECTOR*
The ice patrol ship *Protector* viewed from her survey motorboat, 7 January 2016, is deployed on operations for 330 days a year, and normally spends the southern summer in Antarctica supporting the UK's obligations as a signatory to the Antarctic treaties and working with British partner agencies to further the natural preservation of that continent. She is fitted with a hull-mounted multi-beam echo sounder, two 60-tonne-lift cranes, a survey motorboat, an 8.5m ramped workboat, seven high-speed rigid inflatable and inflatable boats, three quad bikes and trailers, and a Land Rover and two trailers. *Protector* began life in 2001 as the MV *Polarbjørn*, a Norwegian icebreaker and polar research vessel, and was commissioned into the RN fleet on 23 June 2011. A long refit in Middlesbrough in 2020 was followed by ice-ramming trials in the Arctic. Her crew includes a team of permanent divers, who undertake exploratory surveys and ensure that environmental guidelines are being upheld, and a team of mountain-trained Royal Marines. (Crown Copyright/OGL)

ABOVE • Offshore Raiding Craft of 539 Assault Squadron
Royal Marines and Royal Navy personnel from 539 Assault Squadron about to perform a beach assault from offshore raiding craft (ORC) in Harstad, Norway, February 2016. These ORC were embarked in amphibious warfare vessels and could be underslung from Sea King Mk 4 or Merlin helicopters. They were mainly used for 'strategic raiding' where speed and covertness were desired, with a top speed of 39 knots, or 32 knots when fully loaded. The Marines also assaulted the beach from landing craft air cushioned (LCAC) hovercraft. The winter deployment for the Royal Marines in Norway formed part of the ten-day NATO Cold Response 16 Exercise, developing cold weather warfare skills with Norwegian, Dutch and US Marine Corps forces and the RN's sister services. The Norwegian-led exercise was a biennial event, and in 2016 involved some 15,000 personnel from 12 NATO countries and Sweden. In 2022, 30,000 personnel from NATO countries and Sweden and Finland participated. (Crown Copyright/OGL)

L12

LEFT • HMS *OCEAN*

The helicopter carrier *Ocean* with MV *Eddystone*, exercising in the Mediterranean, 28 September 2016. Earlier that month *Ocean* had left Devonport for the inaugural Joint Expeditionary Force (Maritime) Task Group deployment. The bulk of this deployment took place East of Suez, and was designed to demonstrate the UK's ability to deploy combat-capable maritime forces anywhere in the world. The core task group also included RFA *Mounts Bay*, the MoD strategic Ro-Ro vessel *Eddystone* and the assault ship *Bulwark*. Elements of the Royal Marines 42 Commando were spread across the force. Frigates and destroyers from the Royal Navy and French Navy joined throughout the deployment. On 24 March 2017 *Ocean* returned to Devonport after steaming 23,000 miles and visiting 11 countries. In August 2017 she left Devonport for her final deployment, as NATO flagship in the Mediterranean, but was redeployed to assist in disaster relief efforts following hurricanes in the Caribbean. She was decommissioned on 27 March 2018 at HMNB Devonport, with the queen attending the ceremony. (Crown Copyright/OGL)

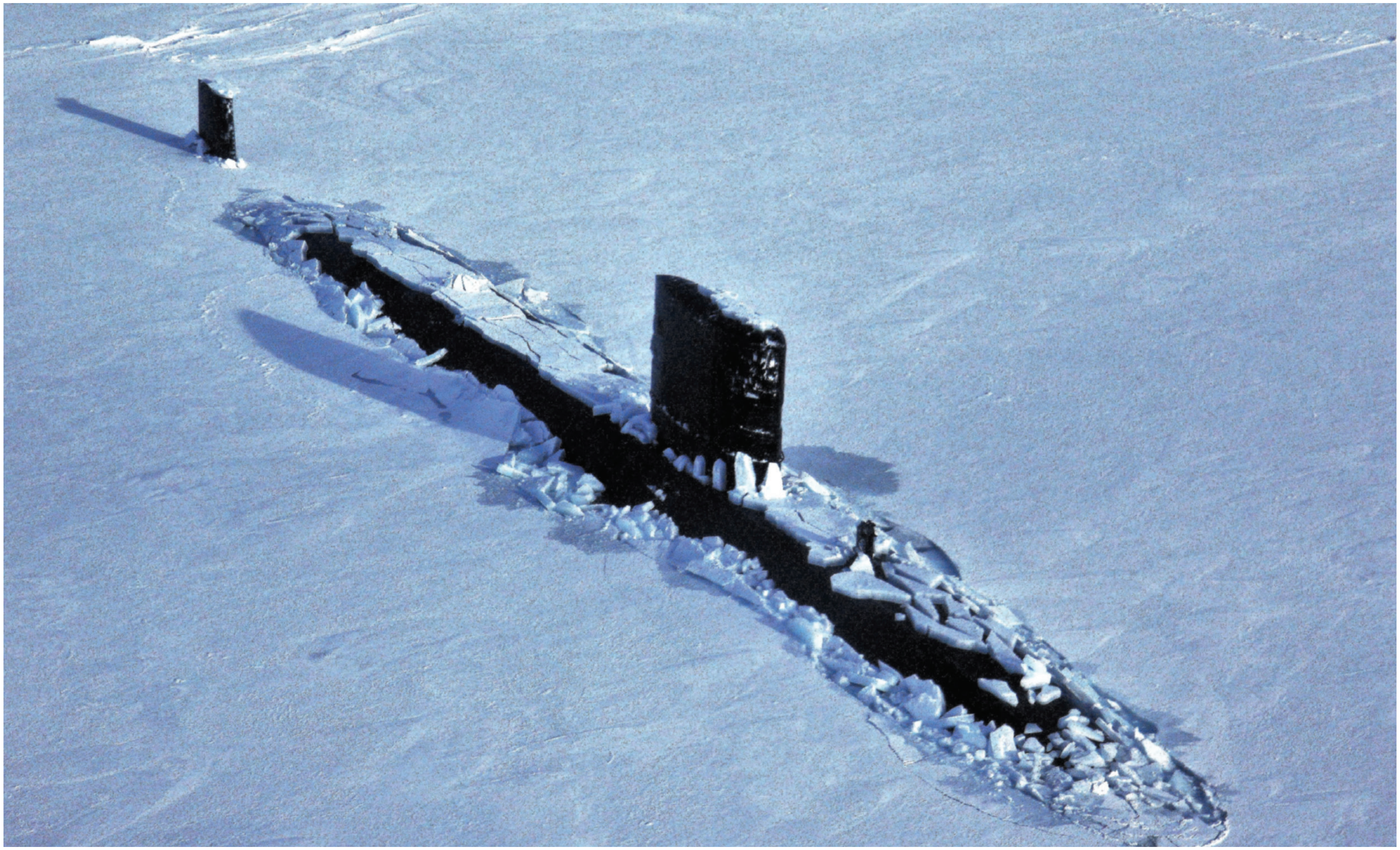
ABOVE • HMS *DRAGON*

The Type 45 destroyer *Dragon* is seen in October 2016 when escorting Russian corvettes, and is standing off the corvette *Zeleni Dol* and a Goryn-class tug. *Dragon* was deployed on Fleet Ready Escort (FRE) tasking in the English Channel, and was observing two Russian Sviyazhsk-class corvettes, as they replenished at sea with one of their Goryn-class tugs. The type 45 destroyer had intercepted the *Zeleni Dol* and *Serpukhov* as they entered the Channel, having completed their operations against Syria in the Mediterranean, in what was a well-established and standard response by the RN to Russian warships in or near British waters. *Dragon* was instantly recognisable by the Welsh dragon artwork on her bow. Built by BVT Surface Fleet from blocks fabricated at Govan, Scotstoun and Portsmouth, and assembled at Scotstoun, she was the fourth ship of her class. She commenced builder's trials on 5 November 2010 and was commissioned at Portsmouth on 20 April 2012. (Crown Copyright/OGL)

ABOVE • HMS *PORTLAND*
The Type 23 frigate *Portland* seen in December 2016. Three months later she returned from her nine-month worldwide deployment, and paid off for a long refit and life extension programme in Devonport's frigate complex. This began in 2018, and included installing Artisan 3D radar and the new to Royal Navy 2150 hull-mounted sonar, and replacing the Sea Wolf air defence missile system with the new Sea Ceptor. Originally commissioned in 2001, she was the fourth of the eight Type 23s scheduled to get this treatment. *Portland* emerged in April 2021 for post-refit sea trials and then trialled a new two-stage programme of Operational Sea Training: two weeks of Operational Sea Safety Training (OSST) – including damage control, navigation, engineering and sea boat operations, followed by four weeks of Warfighting Operational Sea Training (WOST), carrying out a combat mission in the face of potential air attacks, submarine attacks, torpedo and bomb hits, weapons, sensors, machinery breaking down – often simultaneously. (Crown Copyright/OGL)

RIGHT • HMS *TORBAY*
The Trafalgar-class attack submarine *Torbay* transits Plymouth Sound to HM Naval Base Devonport for the last time, flying her paying-off pennant, 6 June 2017, prior to decommissioning on 14 July after 30 years' service. Although scheduled to decommission in 2015 her service life was extended by two years because of the late completion of Astute-class boats. She had first commissioned on 7 February 1987, having been built by Vickers Shipbuilding & Engineering, Barrow. In early 2006, *Torbay* was selected for an experiment in the use of colour schemes to reduce the visibility of submarines from the air. The standard black paint of Royal Navy submarines (suitable for the North Atlantic) was replaced by a carefully selected shade of blue which was more suited to the blue waters of the Persian Gulf and Indian Ocean. The first HMS *Torbay* was launched in 1693 and named to commemorate the landing of William of Orange at Torbay in 1688. (Crown Copyright/OGL)

SD FORCEFUL



ABOVE • HMS *TRENCHANT*
The Trafalgar-class attack submarine *Trenchant*, after she had broken through the metre-thick ice of the Arctic Ocean in March 2018 on Ice Exercise 18, a series of trials designed to test submariners' skills in operating under the Arctic ice cap. She joined the US submarines *Connecticut* and *Hartford* for the exercise, which was coordinated by the US Navy's Arctic Submarine Laboratory. This combined team of military staff and scientists run the testing schedule from an ice camp established on an ice floe in the Arctic Ocean, north of Alaska.
On 22 May 2013 *Trenchant* had completed the longest patrol ever carried out by a Royal Navy attack submarine: 335 days (11 months) during which the submarine sailed 38,800nm and visited six different ports: Fujairah, UAE; the British Indian Ocean Territory – Diego Garcia; Bahrain; Aqaba, Jordan; Souda Bay, Crete; and Gibraltar. She sailed into Devonport for the last time on 26 March 2021 before decommissioning after 32 years' service. (Crown Copyright/OGL)

RIGHT • HMS *DEFENDER*
The Type 45 destroyer *Defender* carries out a series of training exercises with her Pacific 24 rigid-hull inflatable seaboat to enhance her ship boarding skills, on 1 July 2019, ahead of a seven-month deployment starting in the following month. This was planned to be in the Asia-Pacific region but en route she was redeployed to the Middle East and Indian Ocean to strengthen British presence there. There she took part in multinational maritime security patrols. As part of Combined Task Force 151 in the Indian Ocean she disrupted the flow of narcotics from the Makran coast on the Gulf of Oman to East Africa, Yemen and Sri Lanka, seizing two large drugs consignments. The boardings were conducted by a small team of Royal Marine commandos. Also, operating as part of Combined Task Force 150, she escorted merchant ships through the vulnerable Strait of Hormuz. *Defender* had been accepted into service on 25 July 2012, the last of six Type 45s. (Crown Copyright/OGL)

D36

F236

LEFT • HMS *MONTROSE*
The Type 23 frigate *Montrose* escorting the container ship *Brighton* in the Persian Gulf in September 2019, having been forward deployed to Bahrain in April for three years. In the first two months she and *Duncan* safely shepherded nearly 90 British merchant ships through the Strait of Hormuz, the narrow gateway to the Gulf. *Montrose* passed through the straits 38 times – each time harassed by hostile forces, from radio taunts and drones overhead through to fast missile boats approaching at speed. She was forced to fire flares on more than a dozen occasions to warn off Iranian forces, and prevented Iranians seizing the tanker *British Heritage*, after approaching at full speed and training all her guns on the tanker's harassers. Her work in the Gulf also included anti-narcotics and anti-terrorism operations. She worked on a two-watch rotation basis – every four months the port and starboard crew rotated. The starboard crew of *Montrose* was made up of sailors from her sister ship *Monmouth*, which decommissioned in 2019.
(Crown Copyright/OGL)

ABOVE • RFA *TIDEFORCE*
Tideforce seen whilst deployed with the carrier strike group on Exercise *Westlant 19* in the Atlantic Ocean, September 2019. She had entered service in July 2019, and was the fourth of the Tide-class tankers. At 39,000 tonnes, they were the largest ships in service with the Royal Fleet Auxiliary, and with a range of over 18,000 nautical miles could carry up to 19,000 cubic metres of fuel and 1,400 cubic metres of fresh water. There were three stations for replenishment at sea (RAS) abeam, for diesel oil, aviation fuel and fresh water, and also a rig for astern replenishment. The flight deck (which could take a Chinook helicopter) and hangar allowed vertical RAS. They could be armed with two 30mm cannons and two Phalanx CIWS when on high-risk deployments, such as East of Suez. Although built by Daewoo in South Korea, the customisation and militarisation work to prepare the ships for operations was undertaken at the A&P shipyard in Falmouth.
(Crown Copyright/OGL)

LEFT • HMS *QUEEN ELIZABETH*

UK F-35 Lightning fighters aboard the aircraft carrier *Queen Elizabeth* for the first time, October 2019. Flown by Royal Navy and Royal Air Force pilots, the jets were embarked to conduct operational trials off the east coast of the USA. These trials involved mission planning, arming the aircraft using the ship's Highly Automated Weapon Handling System, flying missions and debriefing on completion. This followed successful developmental trials in 2018 with US Lightning jets, which conducted 500 take-offs and landings during their 11-week period at sea. The landings on *Queen Elizabeth* were part of the Exercise *Westlant 19* carrier strike group deployment. During this time, she was escorted by Type 45 destroyer *Dragon* (visible off the port side of the carrier), the Type 23 frigate *Northumberland* and the RFA tanker *Tideforce*. Merlin helicopters from 820 Naval Air Squadron (providing anti-submarine warfare protection) and 845 NAS (for general duties, search and rescue, commando carrying) were also aboard *Queen Elizabeth*. (Crown Copyright/OGL)

ABOVE • HMS *QUEEN ELIZABETH* and F-35B Lightning

The flight deck officer in *Queen Elizabeth* launches a Lightning jet during operational testing with the six embarked UK F-35B Lightning fighters, during the Exercise *Westlant 19* deployment in October–November 2019. The tests allowed the equipment and crew to operate under realistic warfighting scenarios to ready them for their first operational deployment. The process of getting weapons from the magazines in the bowels of the ship to the flight deck was facilitated by the Highly Automated Weapon Handling System – unique to the Queen Elizabeth class. It used a network of tracks, upon which a number of weapon-carrying mechanical 'moles' moved and were remotely controlled from operator consoles. They carried weapon loads on pallets to the ship's weapon preparation areas or hangar via a system of hydraulic lifts which ran through the heart of the carrier. Once the air weapons had been prepared by technicians they were moved to the flight deck via another set of lifts, from where they could be wheeled on trolleys to the aircraft. (Crown Copyright/OGL)

HM Ships *PRINCE OF WALES* and *QUEEN ELIZABETH*

Prince of Wales (foreground) arrives at Portsmouth for the first time, 4 December 2019, with her sister ship *Queen Elizabeth* already berthed at Victory jetty. *Prince of Wales* had left Rosyth, where she had been assembled from modules built in several different yards, on 22 September, and undertook three months of sea trials in the North Sea. She was commissioned at Portsmouth on 10 December, the 78th anniversary of the sinking of her predecessor, the battleship *Prince of Wales*, in 1941. Her flight deck was 70 metres wide and 280 metres long, and she could embark 36 F-35B Lightning II fighters and four Merlin helicopters. She had a ship's company of around 700, increasing to around 1,600 with aircrew on board. On 1 January 2022 *Prince of Wales* took over the role of command ship of NATO's maritime high readiness force from the French navy. She spent the next eight months supporting NATO exercises in the Arctic, Baltic and Mediterranean. (BAE Systems)

ABOVE • HMS *MEDWAY*
A Merlin, from 845 Commando Helicopter Force, fast ropes personnel from RFA *Argus* to the Batch 2 River-class offshore patrol vessel *Medway* in the British Virgin Islands, August 2020. *Medway*, commissioned 19 September 2019, was in her first year as the RN's permanent presence in the Caribbean, which was augmented by an RFA with an embarked Wildcat helicopter during the hurricane season. Batch 2 were designed for a total ship's company of just under 60, but with rotating manning needed only 38 crew at any one time to go to sea. With a speed of 25 knots the five ships were four knots faster than the Batch 1 OPVs, carried a 30mm, not 20mm main gun, two miniguns, four machine guns, two Pacific 24 sea boats, and had a more spacious, computerised bridge. Each ship was equipped with a flight deck (which only *Clyde* of Batch 1 had) and had accommodation for up to 50 troops/Royal Marines to support operations ashore if needed. (Crown Copyright/OGL)

RIGHT • HMS *SHOREHAM*
The Sandown-class minehunter *Shoreham* off the coast of Bahrain in January 2021 whilst deployed on Operation *Kipion*. She was one of seven Sandown-class ships built to the Batch 2 design. Design changes included accommodation for female officers and ratings, bigger Voith Schneider propulsion units, a more powerful crane for underwater vehicle deployment and a bigger, improved decompression chamber for divers. From June 2006 all eight remaining Sandown-class vessels were based at Faslane, to comprise the 1st Mine Countermeasures Squadron, rather than some of the class being based at Portsmouth as previously. Atlas Elektronik Sea Fox expendable mine disposal submersibles were fitted to replace the PAP 104 submersibles on these eight vessels. *Shoreham* was built by Vosper Thornycroft, Woolston, and accepted into service on 28 November 2001. During 2012–2015 and 2018–2021 she was deployed to the Persian Gulf in the 9th Mine Countermeasures Squadron based at Bahrain. The 2021 defence white paper announced that all Sandown-class vessels would be withdrawn by 2025. (Crown Copyright/OGL)

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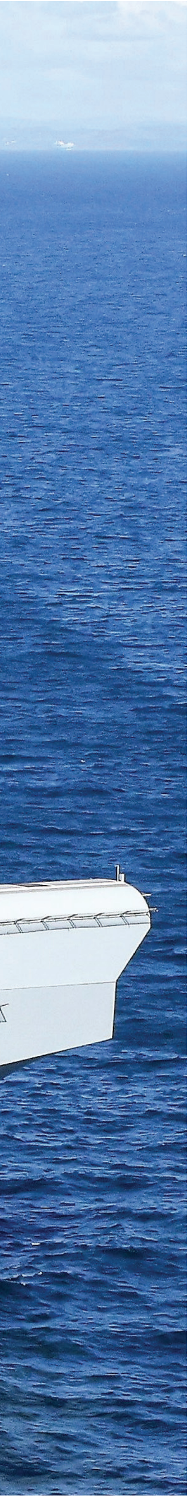

LEFT • HM Ships *PRINCE OF WALES* and *QUEEN ELIZABETH*
The aircraft carriers *Prince of Wales* (foreground) and *Queen Elizabeth* met at sea for the first time on 19 May 2021. With two 65,000-tonne carriers operational, Britain had a continuous carrier strike capability, with one vessel said to be always ready to respond to global events at short notice. *Prince of Wales* had sailed from Portsmouth on 30 April 2021 for sea trials off the south coast of England, after receiving a series of upgrades and enhancements throughout 2020. *Queen Elizabeth* was on her final exercise before deploying to the Far East as flagship of the Carrier Strike Group. During 2020 *Prince of Wales* had been at sea for just 30 days, compared to 115 days for *Queen Elizabeth*, largely because of the flooding incidents in May and October: the latter incident put her out of action for six months. In the two-year period 2019–2020 *Prince of Wales* was at sea for less than 90 days. A failed propeller shaft in September 2022 put her out of action again for months, missing a long-planned deployment to the west Atlantic. (Crown Copyright/OGL)

ABOVE • HMS *ARTFUL*
In May 2021 the third Astute-class submarine, *Artful*, joined the *Queen Elizabeth* Carrier Strike Group on its seven-month deployment, and is seen in the Mediterranean on 16 June 2021 after acting as the submarine threat for the strike group during Exercise *Strike Warrior*. She shared duties on the deployment with *Ambush* and *Astute*. *Artful* was ordered from GEC's Marconi Marine (later BAE Systems Submarines) on 17 March 1997, laid down at Barrow on 11 March 2003, launched on17 May 2014, accepted into service on 14 December2015 and commissioned on 18 March 2016. This illustrates the very long lead time for these boats, which has been exacerbated by schedule overruns. These delays meant that in 2021 (by which time the fourth boat, *Audacious*, was entering service) it was announced in the Integrated Review that the service lives of the last two Trafalgar-class boats, *Talent* and *Triumph*, would be extended by at least 12 and 18 months respectively. (Crown Copyright/OGL)

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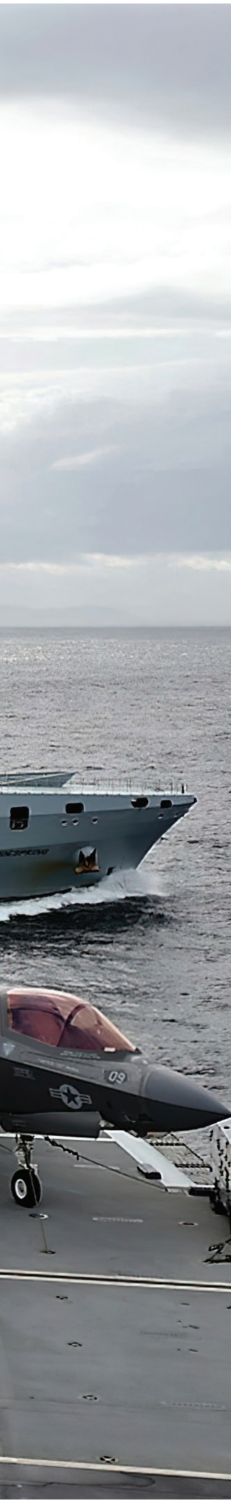
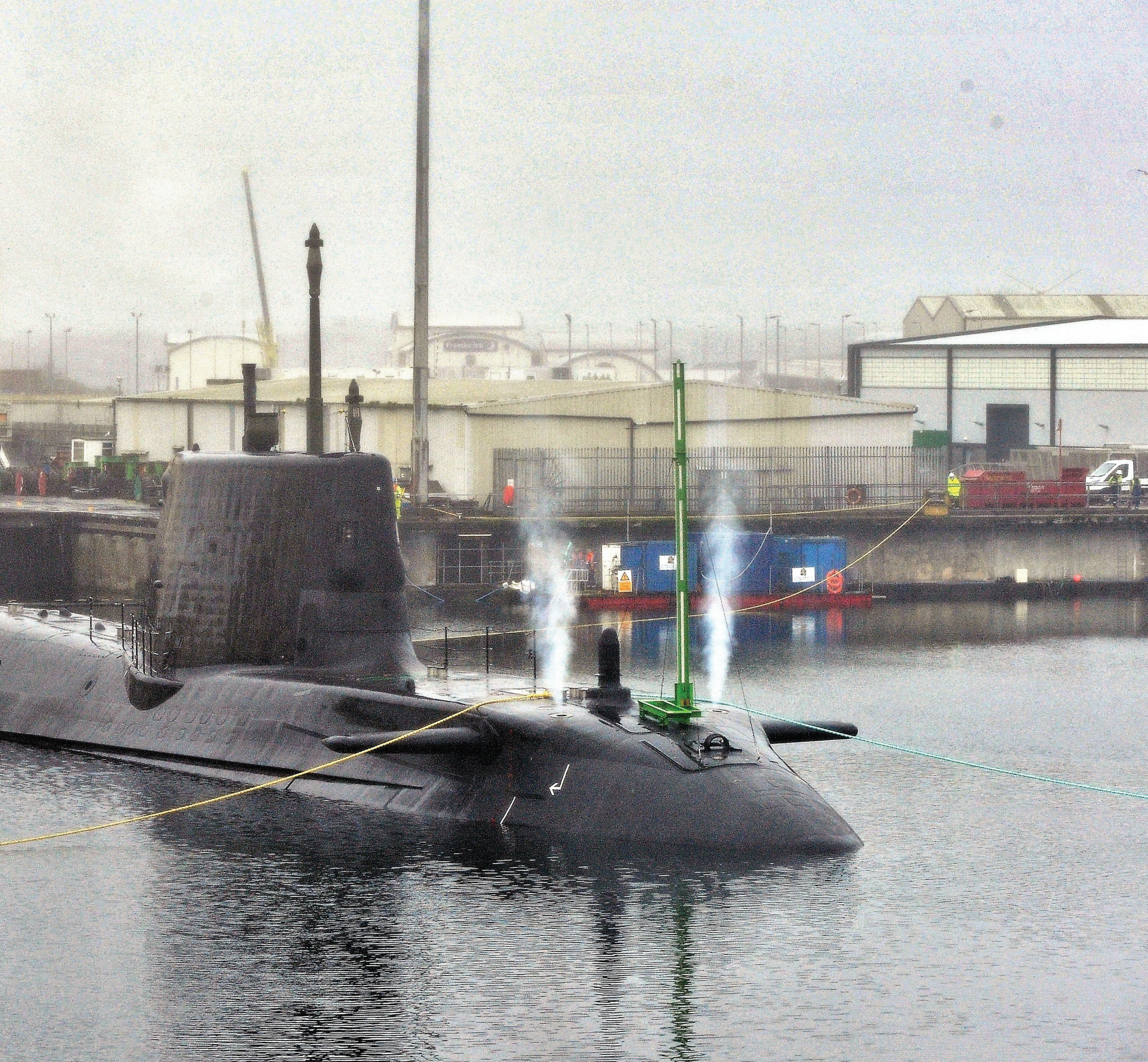


LEFT • RFA *TIDESPRING* and HMS *QUEEN ELIZABETH*
The tanker RFA *Tidespring* sailing away after a replenishment at sea with the aircraft carrier *Queen Elizabeth*, 9 May 2021. On the deck of the carrier are both RAF and US Marine Corps F35-B aircraft. Replenishment was conducted successfully, as part of capability checks during Exercise *Strike Warrior*, before the carrier strike group started its first operational deployment to the Mediterranean, Indian Ocean and East Asia. *Tidespring* had been armed in preparation for the deployment: the 30mm cannons are fitted aft, directed to starboard and port. One of the Phalanx close-in weapon system mounts is located forward, and the other aft. On the deployment she sailed 43,136 nautical miles and conducted 111 replenishments at sea. *Tidespring* was the first of class: the first steel was cut for her on 24 June 2014 in Okpo, South Korea, and she was accepted into service 27 November 2017, one year late. No British yards had tendered for the construction of the four Tide-class ships. (Crown Copyright/OGL)

ABOVE • HMS *TAMAR*
The dazzle-painted offshore patrol vessel *Tamar* leaving Portsmouth on 7 September 2021 to be forward deployed in the Indo-Pacific Region. She was the fourth of five Batch 2 River Class – larger, faster and more capable than the original Batch 1s. Embarked in *Tamar* were 14 officer cadets who had been training at Britannia Royal Naval College for the previous 23 weeks and were conducting their initial sea training before passing out as commissioned Royal Navy officers. She had sailed with her sister ship *Spey*, also bound for the Indo-Pacific region. On 26 October, after transiting the Panama Canal and calling at San Diego, the pair sailed into Pearl Harbor, Hawaii, in order to carry out essential maintenance, replenish stocks and to carry out crew changes. The forward deployment of the two vessels was expected to last for at least five years, covering seas from the east coast of Africa to the east Pacific seaboard but with particular emphasis on the western Pacific Rim. (Crown Copyright/OGL)

RIGHT • HMS *ANSON*
Under the control of its Royal Navy crew, the fifth Astute-class submarine, *Anson*, completes its first trim dive in Barrow's Devonshire Dock. Over two days in February 2022 the boat successfully submerged to prove her safety and stability, assess her precise weight, establish her centre of gravity, prove her watertight integrity and test sensors and some of her systems ahead of her sailing for the first time. On board were 64 people including crew, BAE Systems personnel and MoD staff, and the boat dived to a depth of 15 metres. Four trollies of lead ballast weighing 16 tonnes had been loaded aboard, which were moved across the width of the vessel to confirm her stability. She had been launched on 20 April 2021, having been ordered in 2010 from BAE Systems on a contract worth £1.4 billion. She was scheduled to start sea trials in 2020 but this milestone was missed by two years, and she was commissioned on 31 August 2022. (BAE Systems)

NEXT PAGES • HMS *AMBUSH*
Royal Marines of the Surveillance and Reconnaissance Squadron about to deploy an inflatable raiding craft from the submarine *Ambush* at Lygan Fjord, northern Norway. Controlling Norway is of great strategic importance, helping limit Russian naval access to the North Atlantic and the North Sea, as well as denying them a base for attacking the UK and northern Europe. *Ambush* was involved in Exercise *Cold Response 22*, a large-scale Norwegian-led exercise in March–April 2022, involving a total of 30,000 personnel from 27 nations, including NATO forces, and Sweden and Finland. The marine commandos refreshed skills in surviving, moving and fighting across the ice in their annual winter deployment inside the Arctic Circle. To launch their raiding craft, *Ambush* will be ballasted down by the stern, allowing the craft to float off. *Cold Response* is a biennial event, but the 2022 exercise was the biggest since the 1980s. Other British ships involved in *Cold Response 22* were *Prince of Wales, Albion, Defender, Northumberland, Grimsby,* and RFAs *Mounts Bay* and *Tidesurge*. (Crown Copyright/OGL)



APPENDIX 1

ORGANISATION OF THE FLEETS, MAY 1952

THE HOME FLEET

Heavy Squadron: *Vanguard* (F = flagship), *Indomitable* (F), *Theseus*, *Eagle*, *Superb*, *Swiftsure*, *Apollo*.
Home Fleet Training Squadron: *Indefatigable*, *Implacable*.
'Darings:' *Diamond*
4th Destroyer Squadron: *Agincourt* (L = leader), *Aisne*, *Corunna*, *Jutland*
5th Destroyer Squadron: *Solebay* (L), *Gabbard*, *St James*, *St Kitts*, *Sluys*
6th Destroyer Squadron: *Battleaxe* (L), *Broadsword*, *Crossbow*, *Scorpion*
6th Frigate Squadron: *Loch Alvie*, *Loch Fyne*, *Loch Insh*, *Loch Killisport*, *St Austell Bay*, *Snipe*, *Bigbury Bay*

HOME SUBMARINE FLOTILLAS

2nd Submarine Flotilla/Squadron, Portland: Depot ship – *Maidstone*
Sirdar, *Sidon*, *Scythian*, *Sleuth*, *Subtle*, *Solent*, *Selene*, *Tradewind*, *Aurochs*, *Auriga*, *Ambush*
3rd Submarine Flotilla/Squadron, Rothesay: Depot ships – *Wolfe, Woodbridge Haven*
Attached escorts – *Termagant*, *Zambesi*, *Tenacious*. *Scorcher*, *Sea Scout*, *Tally Ho!*, *Taciturn*, *Turpin*, *Alcide*, *Anchorite*, *Artful*, *Andrew*, *Amphion*
5th Submarine Flotilla/Squadron, Gosport: *Springer*, *Seneschal*, *Trespasser*, *Tiptoe*, *Tudor*, *Acheron*, *Alderney*

HOME COMMANDS

Portsmouth Command

Destroyers: *Finisterre, Saintes, Obedient, Orwell, Onslow*
Radar Training Ship: *Boxer*
Frigates: *Fleetwood, Rochester, Redpole, Starling*

3rd Escort Flotilla/2nd Training Squadron, Portland: *Flint Castle*, *Hedingham Castle*, *Leeds Castle*, *Tintagel Castle*, *Helmsdale*, *Zephyr* (L), *Zest*, *Myngs*, *Portchester Castle*, *Brocklesby*

Minesweeper Trials and Training (attached HMS *Vernon*): *Plover*, *Fancy*, *Pluto*, *Marvel*

Fast Patrol Boat Squadrons, Gosport
1st FPB Squadron: FPB *1024, 1026, 1027, 1029, 1030, 1031*
2nd FPB Squadron: *Proud Fusilier, Proud Grenadier, Proud Guardsman, Proud Highlander, Proud Knight, Proud Lancer, Proud Legionary, Proud Patriot, Proud Patroller*

Plymouth Command

Aircraft carriers (trials): *Illustrious, Perseus*
Training cruiser: *Devonshire*
Trials cruiser: *Cumberland*
Destroyers: *Roebuck* (L), *Grenville, Ulysses, Cadiz, Ulster*
Frigates: *Burghead Bay, Launceston Castle, Carisbrooke Castle*

Nore Command

Frigate: *Stork*
Destroyers: *Zest*, *Obdurate*
4th Minesweeping Squadron, Harwich: *Bramble*, *Cockatrice*, *Mandate*, *Pickle*, *Pincher*, *Rattlesnake*, *Rinaldo*, *Laertes*
104th MS Squadron, Harwich: MMS *1569, 1577, 1610, 1783, 1791, 1728, 1790*
232nd MS Squadron, Harwich: ML *2571, 2154, 2192, 2221, 2248, 2342, 2582, 2583.*

Rosyth Scotland & Northern Ireland Command

Destroyers: *Wizard*, *Savage*
Ocean Minesweeper: *Welfare*
4th Training Squadron, Rosyth: *Wakeful*, *Whirlwind*, *Wrangler*, *Ulster*, *Widemouth Bay*, *Enard Bay*, *Largs Bay*, *Wilton*
3rd Training Squadron, Londonderry: *Creole*, *Crispin*, *Loch Arkaig*, *Loch Fada*, *Loch Tralaig*, *Loch Veyatie*, *Rocket*, *Relentless* (L)

RNVR Tenders

Division	RNVR name	Regular RN name
Tay	*Montrose*	MMS *1077*
Forth	*Killiekrankie*	MMS *1048*
Tyne	*Bernicia*	MMS *1089*
Tyne	*Northumbria*	MMS *1590*
Humber	*Humber*	MMS *1030*
London	*Thames*	ML *2789*
London	*Isis*	MMS *1785*
Sussex	*Curzon*	MMS *1017*
Solent	*Warsash*	ML *2248*
Severn	*Venturer*	MMS *1761*
South Wales	*St David*	MMS *1733*
Mersey	*Mersey*	MMS *1061*
Clyde	*St Mungo*	MMS *1060*
Ulster	*Kilmorey*	MMS *1031*

MEDITERRANEAN FLEET

1st Cruiser Squadron: *Glasgow* (F), *Euryalus*, *Gambia*,* *Cleopatra*, *Manxman*
'Darings:' *Daring*, *Defender*
1st Destroyer Squadron: *Chequers* (L), *Cheviot*, *Chevron*, *Chieftain*, *Chivalrous*
3rd Destroyer Squadron: *Saintes* (L), *Armada*, *Gravelines*, *Vigo*
2nd Frigate Squadron: *Mermaid* (L), *Cygnet*, *Magpie*, *Peacock*
5th Frigate Squadron: *Loch Craggie*, *Loch Dunvegan*, *Loch Lomond*, *Loch More*, *Loch Scavaig*, *Surprise*
* detached to East Indies Station

Mediterranean Fleet – Submarines and Minor Warships

1st Submarine Flotilla/Squadron, Malta: Depot ship – *Forth*
Sturdy, *Sanguine*, *Sentinel*, *Tabard*, *Teredo*, *Trump*, *Token*, *Trenchant*
2nd Minesweeper Squadron, Malta: *Chameleon*, *Fierce*, *Plucky*, *Rifleman*
108th Minesweeper Squadron, Malta: MMS *1532*, *1534*, *1635*, *1672*, *1685*
LST Squadron: *Dieppe*, *Striker*, *Messina*; plus *Lofoten* (reserve at Malta)
Major Auxiliaries: *Tyne*

EAST INDIES STATION

4th Cruiser Squadron: *Jamaica*, *Mauritius*, *Birmingham*, *Kenya* plus *Gambia* attached ex Med 1st Cruiser Sqn
Frigates: *Loch Glendhu*, *Loch Quoich*

Persian Gulf & Red Sea Division

Wild Goose, *Wren*

FAR EAST STATION

(* Engaged in Korean War operations)
Aircraft Carriers: *Triumph*,* *Unicorn*,* *Theseus*, *Glory*,* *Ocean**
5th Cruiser Squadron: *Belfast*,* *Jamaica*, *Ceylon**
8th Destroyer Flotilla/Squadron: *Cossack** (L), *Cockade*,* *Comus*,* *Concord*,* *Consort*,* *Constance*,* *Charity**
3rd Frigate Squadron: *Black Swan* (L), *Alacrity*, *Amethyst*,* *Hart*, *Opossum*, *Crane**
4th Frigate Squadron: *Cardigan Bay*,* *Morecambe Bay*,* *Mounts Bay*,* *St Brides Bay*,* *Whitesand Bay**
Despatch Vessel – *Alert*
4th Submarine Division, Sydney NSW: *Tactician*, *Telemachus*, *Thorough*
6th Minesweeper Flotilla/Squadron, Singapore (in reserve): *Jaseur*, *Lioness*, *Lysander*, *Maenad*, *Magicienne*, *Michael*
120 Minesweeper Squadron, Hong Kong: MMS *1536, 1556, 1579, 1584, 1786, 1797*

SOUTH ATLANTIC AND SOUTH AMERICA STATION

Cruisers: *Nigeria*, *Bermuda*
Frigates: *Actaeon*, *Nereide*

NORTH AMERICA & WEST INDIES STATION

Cruisers: *Sheffield*, *Glasgow*, *Superb*
Frigates (from 1952 rotate between UK and NAWI): *Snipe*, *Sparrow*, *Whitesand Bay*, *Veryan Bay*, *Burghead Bay*, *St Austell Bay*
Submarines at Halifax Nova Scotia (detached from 3rd Submarine Squadron): *Astute*, *Tudor*, *Thule*, *Alcide*

DEPLOYED IN CONFLICTS AND OPERATIONS

Korean War May 1952

Aircraft carriers: *Triumph*, *Theseus*, *Glory*, *Ocean*
Cruisers: *Belfast*, *Ceylon*
Maintenance carrier: *Unicorn*
Destroyers: *Cossack*, *Consort*, *Cockade*, *Comus*, *Charity*, *Concord*, *Constance*
Frigates: *Amethyst*, *Crane*, *Mounts Bay*, *Whitesand Bay*, *Morecambe Bay*, *Cardigan Bay*, *St Brides Bay*

Atom Tests 1952

Campania, *Narvik*, *Tracker*, *Zeebrugge*

UNDERGOING MAJOR MODERNISATIONS AND CONVERSIONS

Aircraft Carrier: *Victorious* (Portsmouth)
Cruisers: *Birmingham* (Portsmouth), *Newcastle* (Devonport), *Newfoundland* (Devonport)
Type 15 conversions: *Venus* (Devonport), *Verulam* (Portsmouth), *Roebuck* (Devonport), *Virago* (Chatham), *Wakeful* (Scott), *Whirlwind* (Palmer), *Rapid* (A. Stephen), *Vigilant* (Thorneycroft), *Volage* (White), *Wrangler* (Harland & Wolff, Liverpool), *Wizard* (Devonport), *Undaunted* (White), *Urchin* (Barclay Curle), *Undine* (Thorneycroft), *Grenvile* (Chatham)
Type 16 Conversions: *Tenacious* (Rosyth), *Orwell* (Rosyth), *Teazer* (Mountstewart), *Termagent* (Grayson Rollo), *Tuscan* (Mountstewart)
T-class submarine conversions: *Thermopylae* (Chatham), *Truncheon* (Chatham), *Totem* (Chatham)
T-class submarines – streamlined: *Tireless* (Devonport)

THE RESERVE FLEET

	Battleship	A/C Carrier	Cruiser	Destroyer	Frigate	Ocean MS	Auxiliary
Medway				8	19	13	5
Harwich			1	7	30	4	3
Portsmouth		2	5	9	29	5	
Plymouth	1		1	17	30	8	3
Rosyth			1		1		
Gareloch	3	1					2
Gibraltar				1			
Malta					4		
Simonstown				3			

When submarines were out of commission, they were in dockyard hands, rather than being laid up.

APPENDIX 2

FLEET ORGANISATION, 10 MARCH 1964

HOME FLOTILLAS AND COMMANDS

Aircraft Carrier: *Eagle* (post-refit trials)
Cruisers: *Lion* (flagship, Home Flotillas)
Guided missile destroyers: *Devonshire, Kent, London*
21st Escort Squadron: *Corunna, Cavendish, Decoy, Dido, Berwick*
30th Escort Squadron: *Aisne, Cassandra, Brighton, Falmouth, Llandaff*
2nd Frigate Squadron (Portland): *Undaunted, Verulam, Hardy, Murray, Pellew, Dundas*
17th Frigate Squadron (Dartmouth): *Torquay, Tenby, Eastbourne, Urchin, Venus, Wizard*
20th Frigate Squadron (Londonderry): *Penelope, Yarmouth, Blackwood, Grafton*
Post-refit trials or Working Up: *Defender, Dainty, Carysfort, Ajax, Relentless, Scarborough*
Home Sea Service (ships on general service commissions): *Ashanti, Mohawk* (9th FS); *Whitby* (7th FS); *Londonderry* (ex 8th FS) – awaiting refit
Fishery Protection Squadron: *Duncan, Keppel, Malcolm, Palliser; Belton, Wasperton, Soberton, Wotton, Watchful, Squirrel*
Portsmouth Squadron: *Wakeful* (frigate), *Plover* (minelayer), *Rampart* (LCT)
1st Minehunter Squadron (Rosyth): *Bronington, Shoulton, Brinkley, Brenchley, Brearley*
2nd Minesweeper Squadron (Port Edgar): *Wolverton, Lewiston, Wiston, Upton, Yarnton; Reclaim* (diving and minesweeper support ship)
3rd Minesweeper Squadron (Portland): *Laleston, Glasserton, Highburton, Yaxham*
5th Minesweeper Squadron (Portsmouth): *Nurton, Repton, Bossington, Caunton, Monkton, Beachampton, Dingley*; *Miner III* (minelayer)
1st Fast Patrol Boat Squadron (Gosport): *Brave Borderer, Brave Swordsman, Dark Fighter, Dark Intruder*
Tender to HMS *St Vincent*, Gosport: *Droxford;* Tender to Sea Cadets, Devonport: *ML 2840*; Tenders to HMS *Osprey*, Portland: *Chailey, Gossamer*
Target Towing Squadron (Devonport): *Gay Charger, Gay Charioteer, Gay Fencer*
Survey Vessels: *Scott, Dalrymple, Echo, Egeria, Enterprise, Medusa*; plus *Meda* (civilian manned)

Submarine Command

1st Submarine Squadron (Gosport): *Porpoise, Rorqual, Grampus, Finwhale, Odin, Oracle, Otus, Aurochs, Totem, Tiptoe, Token*
2nd Submarine Squadron (Devonport): *Onslaught, Otter, Cachalot, Narwhal, Aeneas, Alaric, Astute, Artful, Artemis, Truncheon; Adamant* (depot ship)
3rd Submarine Squadron (Faslane): *Dreadnought, Olympus, Ocelot, Osiris, Sealion, Excalibur; Exmouth* (frigate as submarine target ship), *Maidstone (*depot ship), *Minstrel* (tender to *Excalibur*)
6th Submarine Division (Halifax, Nova Scotia): *Auriga, Alcide*

Royal Naval Reserve

10th Minesweeper Squadron: *Clyde, Curzon, Isis, Killiekrankie, Kilmorey, Mersey, Montrose, Northumbria, St David, Thames, Venturer, Warsash*

FAR EAST FLEET

Aircraft carriers: *Victorious, Centaur*
Commando carriers: *Albion; Bulwark* (on passage)
Guided missile destroyer: *Hampshire* (on passage)

24th Escort Squadron: *Barrosa, Caesar, Lincoln*
26th Escort Squadron: *Loch Alvie, Loch Fada, Loch Killisport, Loch Lomond*
29th Escort Squadron: *Cambrian, Diana, Plymouth, Salisbury*
Detached from 7th FS: *Leopard* (on passage)
Preparing for transfer to RAN: *Duchess* (ex 24th ES)
4th Submarine Division (Sydney): *Taciturn, Tabard, Trump*
5th Submarine Division: *Alliance, Ambush, Amphion, Anchorite, Andrew*
6th Minesweeper Squadron (Singapore): *Chawton, Dartington, Fiskerton, Houghton, Maryton, Puncheston, Wilkieston, Wollaston*
8th Minesweeper Squadron (Hong Kong): *Dufton, Lanton, Penston.*
Depot/Maintenance/Support ships: *Hartland Point, Mull of Kintyre, Manxman*
Despatch vessel: *Alert*
Survey ships: *Cook, Dampier*

MEDITERRANEAN FLEET

23rd Escort Squadron: *Agincourt, Diamond, Lowestoft, Rhyl*
5th Submarine Division: *Thermopylae, Turpin*
7th Minesweeper Squadron: *Ashton, Crofton, Leverton, Maxton, Shavington, Stubbington, Walkerton*
Base ship: *Ausonia*
Despatch vessel: *Surprise*

MIDDLE EAST STATION

9th Frigate Squadron: *Nubian, Eskimo, Gurkha.*
Amphibious Warfare Squadron: *Meon, Anzio, Messina, Striker, Parapet, Redoubt, Bastion*, LCN *603*
9th Minesweeper Squadron: *Appleton, Chilcompton, Flockton, Kemerton*
Survey ship: *Owen*

WEST INDIES STATION

8th Frigate Squadron: *Tartar, Ursa, Whirlwind*
Detached from 21st ES: *Leander*
Survey ship: *Vidal*

SOUTH ATLANTIC STATION

7th Frigate Squadron: *Lynx, Jaguar*
Antarctic Patrol Ship: *Protector*

RESERVE SHIPS

Cruisers: *Belfast, Blake, Sheffield*
Depot/Maintenance ships: *Tyne, Berry Head, Rame Head*
Destroyers: *Crossbow, Scorpion, Matapan*
Frigates: *Orwell, Petard, Tumult, Rapid, Volage, Grenville, Urania*
Amphibious ships: *Dieppe, Lofoten, Countereguard, Buttress*
Minelayer: *Stonechat*
Submarine: *Tireless*
Minesweepers: 37 Ton class; 2 Ley class, 60 Ham class
Seaward defence boats: 16 Ford class
Fast patrol boats: 7 Dark class
Accommodation ships: *Tracker, Mull of Galloway* (Portsmouth); *Narvik* (Devonport); *Girdleness, Duncansby Head* (Rosyth); *Stalker* (Londonderry)
Static training ships: *Solebay, Tally Ho!* (Portsmouth); *Saintes* (Devonport)

IN REFIT

Ark Royal, Hermes, Tiger, Caprice, Carysfort (post-refit trials), *Cavalier, Daring, Delight, Palliser, Russell, Puma, Chichester, Blackpool, Rothesay, Loch Insh* (for Royal Malaysian Navy), *Troubridge, Ulster, Zest, Walrus, Oberon, Orpheus, Acheron, Alderney, Talent, Forth, Triumph*, LST *3031*; *Sullington, Edderton* (conversion to survey vessels)

GLOSSARY

AEF	Ammunition, Explosives, Food Store Ship
BOAC	British Overseas Airways Corporation
BOST	Basic Operational Sea Training
BPB	British Powerboat Company
CAAIS	Computer Assisted Action Information Service
CIWS	Close-in Weapon System (pronounced see-wiz)
COST	Continual Operational Sea Training
F	Flagship
FPB	Fast Patrol Boat
FPS	Fishery Protection Squadron
GRP	glass (or glass fibre) reinforced plastic
HMMS	Her Majesty's Minesweeper
HTP	High-test Peroxide
L	Leader
LCM	Landing Craft Mechanised
LCU	Landing Craft Utility
LCVP	Landing Craft Vehicle Personnel
LPD	Landing Platform Dock
LSC	Landing Ship Craft
LSD	Landing Ship Dock
LSL	Landing Ship Logistics
LST	Landing Ship Tank
MCMV	Mine Countermeasures Vessels
MTB	Motor Torpedo Boat
NAWI	North America and West Indies
OSST	Operational Sea Safety Training
RAS	replenishment at sea
RFA	Royal Fleet Auxiliary
RFR	Royal Fleet Reserve
RIB	Rigid-hull Inflatable Boat
RIMPAC	Rim of the Pacific (Exercise *RIMPAC* is a biennial military exercise)
RMAS	Royal Maritime Auxiliary Service
RNR	Royal Naval Reserve
RNVR	Royal Naval Volunteer Reserve
RNXS	Royal Naval Auxiliary Service
SSBN	Strategic Submarine Ballistic Nuclear
TOW	tube-launched optically tracked wire-guided (missile)
TRALA	Tug Repair and Logistic Area
trot	mooring or berth
URNU	University Royal Naval Units
yomping	marching over difficult terrain carrying heavy equipment

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